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How a Real Motor Truck Distributor Functions

Determination and Hard Work is the Receipt This Distributor Gives for Success in Merchandising Trucks. Salesmen Must Know Mechanical End. Refuses to Jeopardize Business by "Fool" Trading

By A. V. COMINGS

THERE are few more successful or more thoroughly organized truck distributors in the industry than Mueller Brothers, Garford motor truck distributors for the Pittsburgh territory. The methods employed by this concern to sell motor trucks, service them, and build a constantly growing volume of satisfied customers are well worthy of careful notice by those distributors and dealers who want to grow into really important selling organizations in the motor transportation field.

The Mueller Brothers Sales and Service Station at Pittsburgh

Speaking of the distributor's task in building up a dealer organization in his outlying territory, H. F. Happer, sales manager for Mueller Brothers, says:

"The small automotive dealer doesn't like to sell trucks, as a rule. And yet the same amount of effort that he puts into selling passenger cars, and the same investment, would give him a far better profit if he would invest the same amount of money and energy in the selling of motor trucks. It is truer today than ever before, that **hard work gets the business,** and we see this illustrated in our own organization every day.

"If I were asked the requisites for success on the part of a motor truck dealer, I would put first of all, hard work, intelligently applied energy. Coupled with this, should be a thorough knowledge of his own competitors trucks, which is easy to get, and some knowledge of salesmanship.

"But willingness to work comes first, willingness to go after the business time and again until the order is signed. The average sale of a motor truck means at least twenty calls on the prospect, but persistence brings home the order.

"Where we can't get a good dealer in our outlying territory, we arrange with a first class garage for display space, telephone, and service, and place one of our salesmen in that territory with headquarters at that garage. There he has a place to take customers to show the truck, trucks already sold can be serviced under his direction, and he makes all his reports direct to us though he were working in our city territory. This plan has worked out very well.

Small Town Sales and Service

"I believe it is unwise for dealers in the smaller towns to try to maintain their own service departments. In all small towns there is usually a good garage where service may be arranged for. This leaves the dealer free to devote his time to sales with, of course, a general supervision of the service on his trucks to make certain the garage he has picked out is doing the work as it should be done to promote further business with the truck owner."

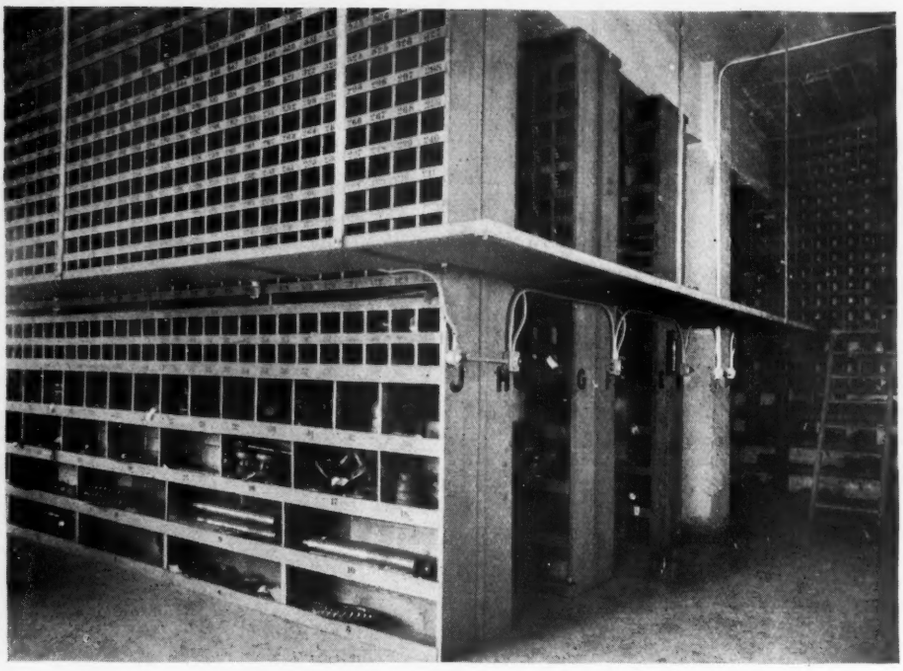
In commenting on the methods he uses to get the best results from his retail salesmen, Mr. Happer said:

"It is just as true today as it has always been, that the salesmen who see the most prospects make the most sales. At least, that has been our experience. Our salesmen make from four to ten calls per day, and make reports on all.

"We give the men a certain number of new prospects every day, to see in addition to their regular calls, and we find that this has resulted in greater efficiency on their part. It livens up their day's work.

"We tried zoning our salesmen, but that didn't work out the way we expected it to. Theoretically it sounds good, but it doesn't work out in practice.

"We still maintain a semi-zoning plan, however, that works well. The men stick fairly close to their own territory, but it is only natural that they often have prospects handed them by friends or owners to whom they have sold trucks, and these prospects may be in another part of the city from where they are working. We let them follow up these prospects, for often they have an inside edge



A Corner of the Service Station Store Room

Note the neat, orderly and systematized lay-out. Small items are stocked above the platform

through their friendships that makes selling, in their case, more certain.

"But the salesman who does not call on a prospect for thirty days loses the prospect, and one of the other boys get him. The result is, the salesmen stick pretty close to prospects they have developed.

Some Tips for Salesmen

"One of the things we rather insist upon with our salesmen is that when, for any reason, they want a truck driven out for a prospect to look over, or after the sale is made, the salesman must ride out with the truck. Most salesmen would far rather send the truck out with a driver, and make the trip in their automobile, but we believe the psychological effect on the prospect is much better if the salesman can climb right down off the truck and enter into his work with the customer.

"Like all other truck distributors, we have had our troubles in securing good salesmen, but we have gradually built up a sales force that gets results. We have secured some of these men from other lines, men who sold insurance, tires, food products, or other commodities. A good salesman, from almost any line, who is willing to WORK, can soon learn the necessary details of truck selling. We insist upon having salesmen who are not afraid to get out and operate a motor truck in a demonstration, and who will learn to make all the little minor adjustments that come in handy so often when out with a customer who may soon be in the market for more trucks. This always pays. Motor truck users don't like 'kid glove' salesmen.

How the Mueller's Handle Used Trucks

"The handling of used trucks seems to be a stumbling block on the road to profits with most truck dealers. We take them in and sell them on a business basis, for the truck dealer who doesn't do this soon finds himself in difficulties.

"When a used truck is offered as part payment on a new job we have it thoroughly inspected by one of our best mechanical men, and our allowance is based on real value, not on what we feel we will have to allow to make the sale. If we can't make the sale on that basis, we let it go, for we refuse to jeopardize our business by 'fool' trading.

"In disposing of our used trucks, we proceed on the assumption that used trucks are a fine means for building up new truck sales. Unless a truck is worth an entire rebuilding job, we sell it to the used truck buyer 'as is,' and make no false representations about it. We tell customer its exact condition, so that he knows just what he is buying and has no reason to find fault with us for any cause.

"But most of the used trucks we sell we first thoroughly overhaul and rebuild, and we guarantee these trucks for just what they are. The result is, that our used truck customers are so well satisfied with their purchases, that they come to us when they are in the market for a new truck, and I believe the truck dealer who overlooks this kind of opportunity to build business friendships is overlooking a very important asset.

Service the Basis of Future Sales

"We have made the basis of all our sales the very best service we know how to give, and I believe this has been the biggest single factor in our continued success and growth. We think we have one of the best service shops in this section of the country, it is completely equipped with good machinery, and we constantly employ from 12 to 20 first class mechanics. Our service shop foreman has been with us 12 years, and several of the men from two to eight years. That kind of a force knows how to do the work.

"We do not confine our service to the Garford truck alone, WE SERVICE ALL MAKES OF TRUCKS, for we believe that when you do a good job for the owner of another make of truck, you are beginning to cement him to your own organization, and when the time comes that he wants a new truck, he comes to the shop that has taken care of him best.

"We keep a supply of service parts that inventories around $75,000 and we find that this fact is very generally known among all owners of other makes of trucks using similar units as the Garford. The result is that many of them come to us for parts. We always get their names, and these names have been fruitful prospects to add to our list.

(*Continued on page 68*)

Complete Lis of Units on the Inspector's Report Card

The List Covers Every Part, Permitting a Thorough Recording of the Vehicle Under Examination

1 General Upkeep
2 Cleaning
3 MOTOR
4 Motor Bolts
5 Motor Bearings (Main)
6 Motor Bearings (Conn. Rod).
7 Valves
8 Valve Lifters
9 Valve Guides
10 Timing Gears
11 Pistons
12 Cylinders
13 Cam Shaft
14 Starting Crank
15 Compression
16 Intake Manifold
17 Exhaust Manifold
18 OILING SYSTEM
19 Oil Pump
20 Piping
21 Sight Gage (Dash)
22 Oil Gage
23 Drip Pan
24 COOLING SYSTEM
25 Radiator
26 Pump
27 Connections
28 Fan
29 CARBURETOR
30 GOVERNOR
31 GASOLINE SYSTEM
32 Tank
33 Piping
34 IGNITION
35 Batteries
36 Magneto
37 Magneto Setting
38 Coil
39 Wiring
40 Spark Plugs
41 Throttle Connection
42 Control Rods
43 STEERING
44 Cross Tubes
45 Tie Rods
46 Worm and Nut
47 Column Floor Brace
48 Knuckles
49 Knuckle Bushings
50 Front Axle
51 Front Wheels
52 Front Tires
53 Rear Wheels
54 Rear Tires
55 CLUTCH
56 Clutch Bearings
57 PROPELLER SHAFT
58 UNIVERSAL JOINTS
59 Lubrication
60 Radius Rods
61 TRANSMISSION
62 Gears
63 Bearings
64 Lubrication
65 JACKSHAFT
66 Bearings
67 Front Sprockets
68 Rear Sprockets
69 Chains
70 Lubrication
71 Brakes
72 Service
73 Emergency
74 Lining
75 REAR AXLE
76 Worm and Gear
77 Alignment
78 Lubrication
79 SPRINGS
80 Front
81 Rear
82 Shackles
83 Bolts
84 Clips
85 FRAME
86 Rivets
87 SUB-FRAME
88 GREASE CUPS
89 CAB
90 CUSHIONS

How Will the Trade-in Affect 1924 Sales?

Too Many Trucks Have Been Traded in This Year at Excessive Allowances. Buck Passing Will Not Remedy the Situation

By C. P. SHATTUCK

EVER so often the subject of the trade-in pops up. Discussion of this subject is most animated when the truck business is good and as there has been a decided revival of interest in motor highway transportation, the subject of trade-ins is in the limelight once more. That's the reason for this article.

The rank and file of the truck industry, particularly the dealer and distributor, would like to see this trade-in subject licked. It has been with us a great many years and is likely to be ever present unless something is done towards bringing about better merchandising methods. We all know what it is and what it does to the dealer. The factory is affected, too, for unsuccessful dealers do not help production.

What are we going to do about it?

Page Mr. Dealer, Please

Discuss the subject with the factory and the general verdict is that it is a dealer problem, one that is best solved individually. In other words, the factory officials state that if each dealer would use sound business sense in his allowances that there wouldn't be any trade-in evil. But the majority of dealers have not been sold on the individual plan and it is doubtful if they ever will be, under present conditions. So the individuality angle is not getting us very far. A certain number of dealers and distributors have solved the trade-in problem but generally they have invested sufficient capital to learn the lesson, via the route of Old Man Experience.

Going back into the archives of truck history it is pertinent to remark that off and on dealers in various sections of the country have tightened up their belts and decided to lick the trade-in but—they never got very far with any plan simply because any and all plans, good, bad and indifferent were not put over. The reason is a human one. They failed to recognize the fact that no organization can be made 100 per cent in practice. In other words, because a few dealers would not sit in at the meetings or join in any movement towards bettering conditions, the other 97 per cent concluded it couldn't be done. And so the party broke up.

What About the 1924 Battle?

The writer desires to emphasize the fact that the truck industry insofar as sales are concerned is on a different basis than during the world war and somewhat different than a year or so ago. Competition is quite keen and the chances are that it will be keener in 1924. In the event that it becomes keener will the truck dealer as a whole lose more money than he has in the past? If there are ten salesmen after an order where there were but two or three, isn't it logical to reason that one or two may be able to sell the boss the idea that the old truck is worth a considerable lot more than it really is? And if Mr. Dealer is ANXIOUS TO GET THE ORDER isn't it possible and probable that he will slip doing his sums of arithmetic? Very likely.

The writer is not going to attempt to outline any trade-in plan but he does suggest that it is high time that truck dealers do a little co-operating instead of fighting each other with the battle ground the allowance for old junk.

Just why the truck dealer cannot take

a few hints from his fellow business associate, the passenger car dealer, is a mystery. And when one thinks of it, the average passenger car dealer does more trading in, by volume, than a dozen or more truck dealers. Just glance at production figures and it will give you some idea of the cars sold this year and last, and the greater number are to prospects with cars to sell.

Truck Dealers Doing a Rip Van Winkle

The passenger car dealer has made progress with respect to the trade-in during the past year or two and the indications are that he is going to make further progress in 1924. Used car plans of varying nature are employed but out of the mass there appears probably two well defined plans the fundamentals of which are BUYING THE CAR RIGHT AND SELLING IT AT A PROFIT!

The greatest trouble with the truck dealer is that he buys trucks! It is doubtful if any plan will be worked out for some time to come whereby an organization can be effected that will regulate what each and every truck dealer will be allowed to pay for his purchase of an old truck. Many an association in the process of getting somewhere has split on this rock plus the fact that the other fellow who remained out of the fold took advantage of the regulated prices or appraisals.

To the writer's mind it is more important **what the dealer gets for the junk** than what he pays for it, for if the dealer can or does sell at a reasonable profit, all factors considered, the buying angle will take care of itself. This brings us to the subject of the market for used trucks.

Why Not Develop a Market

Truck dealers must get busy and build a market for their used trucks, but not via the red ink column. Dealers of each community can develop such a market by building up **confidence among prospects for used trucks.**

Passenger car dealers of Cleveland are at work upon a plan which has practical features. The Cleveland association proposes to create a market for good used cars and to educate the public to the value of buying a car that has an association in back of it. (This plan is described elsewhere in this issue.) In other words, the buyer is guaranteed that he gets what he pays for and pays for what he gets.

A big advertising campaign is planned, the cost of which is to be co-operatively shared. The public is to be sold the idea that a real good used car can be bought at a reasonable price. The campaign is bound to create a demand for cars and provide an outlet for the trade-in.

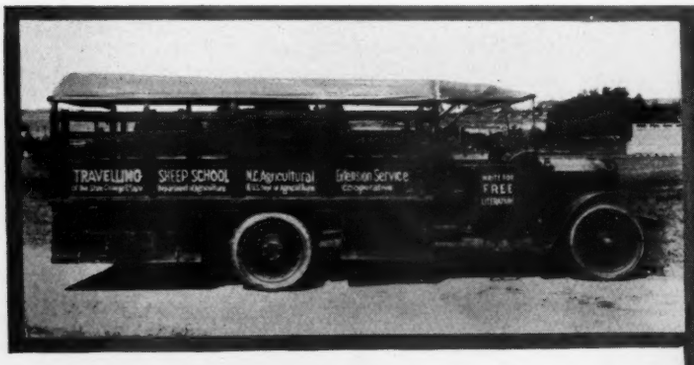
The truck dealers of any city or territory could adopt such a plan for it would establish a market for good used trucks and at the same time the advertising would help boost the truck. As display advertising is used, the benefits are naturally greater than would be derived from a number of small or individual advertisements.

As there is no agreement in the plan as to the amount allowed on the trade-in nor the price set for the used truck, there should not be any resistance offered by an organization as is the case when "regulation of allowances" is main issue. If there were 25 truck dealers in the city and only 20 would joint the movement, the odd five would not be able to influence the public, for the keynote of the plan is the use of an emblem or seal conveying to the public that the truck is right and is approved by the association. Probably the prospect if interested by a dealer outside of the association might ask why the dealer did not "certify" his trucks.

Why Wait for the Other Fellow?

Any plan whereby the dealer can move used trucks, not junk, is bound to assist in sales of the new trucks, for how can a dealer trade if he has reached his limit and is long on used trucks? There is a market for good used trucks and when these are sold right, they in time, provide the opportunity to sell new trucks. Of course the prospect will want to trade-in the one he has, but with the dealer selling used trucks according to the association plan, he should be able to figure out a correct and profitable allowance.

The trade-in is not going to be licked by talking about it or against it but rather by the few dealers in each section having the courage of their convictions, organizing and buying right even if it means letting the order go elsewhere. Isn't it better business to sell a few trucks and make a profit than buy many trucks and hang out the red flag?



Exterior and Interior Views of a Truck Used in North Carolina for Making Practical Demonstrations of Sheep Raising

The agricultural experiment station of North Carolina is making interesting use of a motor truck in carrying practical information on sheep raising into areas of the state not penetrated or covered thoroughly by railroads. Eight sheep are carried in the truck, one ram and one ewe representing each of the four leading breeds; Shropshires, Hampshires, Dorsets and Southdowns. A complete line of equipment for holding sheep shearing, docking and other demonstrations needed in the growth and reproduction of sheep is carried with the truck. Wool samples are carried which show just how the wool is manufactured from grease wool into the finished article.

Seiberling All-Tread Tire

At a recent general sales conference of Seiberling men at Akron, the new Seiberling All-Tread tire was announced. Instead of the usual side walls this tire carries the long bars of its tread design half way down the sides, giving additional protection and traction. This tire will be made in all sizes.

Accessories to be Featured at Baltimore Show

Greater emphasis will be placed on accessories at the annual automobile show of the Baltimore Automobile Trade Association at the Fifth Regiment Armory, Baltimore, January 19 to 26, 1924. Heretofore the gallery of the large hall has been used for the accessory exhibits; this year accessories will be greater in number and will occupy more space.

Harvey E. Mack Company, Minneapolis, Minn., Distributor of Dodge-Graham Bros. Trucks, Believes in Window Displays and That Commercial Cars Can be Displayed as Effectively as Passenger Cars

"We Need the Motor Bus"—

Say Electric Traction Officials

At Their Annual Convention at Atlantic City, Officials of Electric Railway Companies Endorse the Motor Bus as an Ally to Help Give the Maximum Service to the Public

"WE need the motor bus to feed and supplement our car lines, to open up new territory, in fact, complete, round out, and make whole passenger transportation on the highways."

In this one sentence the Committee on Trackless Transportation of the American Electric Railway Association, summed up its report at the recent convention. This report cleared the atmosphere, so to speak, for many electric railway executives who have been reluctant to realize the necessity for adopting the motor bus for certain service in the traction field.

The whole-hearted and unbiased opinions of this committee will do much to set aright the minds of some traction officials who consider the bus as a competitor or an enemy. For a long time the automotive interests have suggested to the electric railway companies the advisability of using the motor bus as a feeder. That much progress has been made in this direction is indicated by the fact that over one hundred electric traction lines now operate motor buses either as feeders or for developing new lines in outlying territory.

EXTRACTS from the report of the Trackless Transportation Committee, of which H. B. Flowers, president of New Orleans Public Service, Inc., is chairman, follow:

The experience of the industry during the past year has been to confirm the findings of the Committee contained in its 1922 report. * * * This experience in general confirms the fact that bus operation is on the average more expensive per bus or seat-mile than electric car operation, but that the higher unit cost is justified where traffic is very light.

The Committee's conclusion last year that "the possibilities of development of transportation with railless vehicles should interest the industry greatly" has been justified by the fact that in the intervening year, from June 1922 to June 1923 the number of electric railway companies to adopt buses for part of their service has increased from 44 to 95 and the number of buses involved from 300 to 925.

* * * *

We believe that the same social and economical forces which have already caused the adoption of auxiliary bus service by 95 electric railways in this country will continue to expand their use in the future and that the association should arrange for the coming year to continue the study of the operating, engineering and accounting details of bus service.

The constantly growing use of bus service by electric railway companies gives this Association a direct and vital interest in the questions of special taxation and traffic regulations affecting motor vehicles in general. In this connection co-operative action with the automotive vehicle associations is desirable.

Another feature which should be of interest to the Association is the provisions of state laws and the attitude of state commissioners as to the regulation of competition with electric railways or the operation of buses by electric railways. In its last report your Committee stated in substance that there was a field for the economic use of buses to supplement the electric railway service in the cities of this country, either by inaugurating bus service on lines of light traffic, where track reconstruction was the other alternative, or by using buses for extending service into new territory where the expected traffic was not great enough to warrant the investment in tracks for electric railway service.

Your Committee also concluded that for handling mass transportation the electric railway is the most reliable and economical method known, but that on account of the availabilty of buses for the special conditions above stated, the electric railways should be alive to the possibilities of bus operation—both in order to handle all the transportation needs of their community and by so doing to prevent wasteful competition by others entering the field due to the electric railways failing to utilize buses where the need for them exists.

The fact that during the past year the number of electric railway companies operating auxiliary bus service has increased from 44 to 95, involving an increase in buses from 300 to 925, **proves that an increasing number of street railway companies are finding places where buses can be used to advantage in supplementing their rail service.**

Experience has shown that the motor bus amalgamates well with street railway transportation. It decidedly helps in providing a unified service in which the various companies are trying to provide street transportation. The menace of the jitney, although still with us, has grown less. Particularly has it become apparent during the past year that after the street railway has installed motor bus operation the public has come to realize how much more satisfactory is the service than that previously rendered by various irresponsible poorly organized jitney companies.

Should Forget Jitney Business

This has been largely due to the adoption by the street railways of the best constructed and designed buses to be found on the market. They have been well maintained, cleaned, painted and run on schedules of frequent and evenly spaced headway from early in the morning until late at night. All this has been a welcome change in many communities.

The automotive industry has progressed in the past few years and is now developing passenger-carrying vehicles of improved design. We are advised that the larger manufacturers of buses have appropriated large sums for the further development of bus design for passenger transportation service. There is a field in transportation in which these vehicles can furnish satisfactory service **and traction officials should not allow an antagonism, aroused by jitney competition to cause them to lose sight of the fact that it is their duty to supply transportation in the territory in which they are operating,** and if extensions are required or present high costs of reconstruction necessitate the abandonment of any track, **they should be quick to consider trackless transportation.**

The electric railways must keep pace with the development in the transportation field if they expect to continue to be the recognized distributing agency of transportation commodity in their territory.

Duplication of Service

Failure on the part of traction companies to recognize and meet the above described situation will result in encouraging independent operators to enter the field and meet these service requirements. Better far for the traction companies and the public to realize fully that duplication of service is detrimental in that it results in a higher cost for transportation, making it desirable that the traction companies shall remain the transportation agency of the community, giving the public what it wants if the request is reasonable and the need apparent. Duplication of service is always ultimately paid for by the passenger and under proper regulation it is to the interest of the passengers that highway transportation shall be conducted as a unified whole.

From the results of experience in operating trackless transportation so far as it must be appreciated that higher operating costs per seat-mile with buses **justifies a higher rate of fare in proportion, in compensation for any expedited service which may be possible by their operation.**

Transportation is lacking in some places where lines have been abandoned on account of high costs of operation or of track reconstruction. The public formerly served by these lines feels that an injustice has been done their communities. Not only where lines have been abandoned but also in many local and country sections where highway transportation has never existed there is a growing demand for some service, and this demand is constantly increasing where communities are stretching out into new territory and going through a process of natural growth. As the recognized distributors of transportation, the traction companies should be prepared to supply this lack. It must be realized, however, that it is incumbent upon sparsely settled districts to assist by caring for deficits until the service becomes self-supporting.

Never again must the transportation companies and the riding public, who eventually pays the bill, be imposed upon for the purpose of land development exploitation.

* * * *

The members of the Committee are convinced that the motor bus has come to stay. It is a business proposition, not a theory. In fact the use of buses where feasible is an established policy with most of the members of your Committee. Committee reports have been made in many associations of street railway men and in the automotive industry. Technical journals have compiled statistics of every description. Two conclusions seem to be reached by reading this data and these reports, and from our own experience:

(1) The electric car running on rails is still the most essential, reliable and economical method of urban, suburban and interurban travel, considering the transportation problem as a whole and especially for mass transportation. This condition arises largely from the fact that the operation costs per passenger are higher for bus operation than with electric cars, and from the further fact that it is not possible to handle mass transportation with buses.

(2) We need the motor bus to feed and supplement our car lines, to open up new territory, in fact to complete, round out and make whole passenger transportation on the highway.

As stated by this committee in the past, it is our duty, as public servants charged with the responsibility for conducting the highway transportation in our respective communities, to adopt every feasible unit or method for furnishing his service.

Report on Bus Operation

ANOTHER very interesting report submitted at this convention was that of the Committee on Bus Operation, of which W. J. Flickinger, assistant to president, the Connecticut Company, New Haven, Conn., is chairman. This report concedes "that there is a place in the present transportation fabric where the motor bus can be used to advantage." The report is quite a lengthy one, incorporating the experiences of seventeen traction companies with motor buses, which are members of the association. This report includes the reasons why the seventeen members have inaugurated motor bus service, also reports on operating methods, maintenance methods, methods of collection and registration and suggestions as to design of motor buses. It also includes drawings showing floor plans of bodies used, also plans of garages constructed by member companies.

In summarizing the reasons for inaugurating motor bus service the report states:

"If a street railway company adopts the policy of providing for all of the transportation needs of the territory served, the possibilities of the bus as an aid to the carrying out of such policy cannot be overlooked.

"As to the matter of substituting bus for rail service, this is wholly a problem of economics. In the case of a low earning rail line faced with heavy rehabilitation or paving charges, the bus provides a means of continuing service with an expenditure for equipment much below the cost of plant renewals or paving."

In reference to type of equipment the report reads as follows:

"The importance of having proper equipment to provide the greatest amount of safety, comfort and convenience cannot be too strongly emphasized and it is pleasing to note that street railway companies are discarding the truck chassis and adopting the improved types as rapidly as the builders are developing them.

"In the further development of the chassis, simplicity and accessibility should be the chief aim of automotive engineers. It should be borne in mind that ordinary running repairs are made without removing the body and, therefore, easy removal and replacement of parts from underneath the chassis should be made possible.

"It is very desirable that time out of service be the minimum. A unit repair system will most adequately meet this requirement. To facilitate this, attention should be given to standardization.

"Consideration must also be given to the peculiar requirements of a vehicle operated in passenger service such as low center of gravity, clutch and gear designs for frequent stopping and starting, adequate and economical power, and spring suspension to give maximum riding comfort under varying load conditions.

"This report will not touch upon body development as we believe that each company will work this out according to its own requirements. In general, there seems no reason why the electric car body designs cannot be used as a base from which to develop a body which will give public satisfaction from the standpoint of safety, comfort and convenience. There will, of course, always be cases which will require a specific treatment based on the particular transportation problem to be solved."

Further extracts taken from this report which should be of interest to the motor bus manufacturer and dealer are as follows:

"Most of the street railway companies operating buses are doing so on such a small scale as not to warrant the increase in overhead and maintenance costs necessary if the work were entirely divorced from the electric car work. We believe, however, that this practice ceases to yield maximum efficiency and economy the moment the number of units becomes large enough to keep a separate corps of mechanics, inspectors and cleaners busy during a full working day. But chassis maintenance requires an entirely different line of training than that of electric car maintenance and if an attempt is made to spread the supervision and maintenance over both types of equipment, the maintenance of both will be unsatisfactory.

"Owing to the wide diversity of local conditions, it is quite impossible for a report of this kind to suggest a standard maintenance organization, but it is believed that as soon as the volume of work warrants, better efficiency and economy can be obtained by completely divorcing the chassis maintenance from the electric car work.

"None of the companies, by reason of short experience, are in a position to give definite information relative to the

(*Continued on page 68*)

Ward Has the Courage of His Convictions

This Electric Truck Manufacturer Takes Issue Publicly With Large Metropolitan Department Store That Still Advocates the Horse to be the Cheapest Form of Transportation for Short-Haul, Frequent Stop, Delivery Work

"IF you are willing to have any recognized Certified Accountant ascertain your complete delivery costs, we will set up against your figures the Ward Electric costs for the same items. We are willing to pay half or all of the Certified Public Accountant's bill with the understanding that if the Ward Electrics will save you time and money you will replace horses with Ward Electrics on such routes as the saving is clearly evident and within such time as it is reasonable to make the change.

"We will guarantee that if our trucks cannot do the work on your routes that they belong to us, not to you."

The above is quoted from the Ward advertisement which appeared in the October 4th issue of the New York Times, in which the Ward Motor Vehicle Company in a most unique and masterly fashion replied to the R. H. Macy & Company's public statement, that the "epitaph on the horse was written too soon."

This advertisement states that the Ward Company has the highest respect for the Macy Company's institution and ability, but when it comes to talking delivery problems, the Ward Company feels that it has had considerable experience. "As a result of this knowledge and experience," reads the Ward advertisement, "we are loath to believe that thorough analysis will support your statement that horses are quicker and cheaper for frequent-stop deliveries two or three miles from the store."

The advertisement goes on to show the advantages of the electric in this class of work; it gives the names of large users of electrics under the title "Yes, We Have No Horses!" It cites figures showing that the number of horses which which were used in five boroughs in New York City, in 1910 was 128,224, while in 1921 there were only 65,126 in the five boroughs.

This advertisement presents the conviction of the Ward Company in a strong, forceful manner. It points out the work which the electric vehicle can do, rather than dwelling at length on the superior design or construction of the vehicle itself. It brings home an important point, which this publication has stressed consistently, that truck selling must be placed upon a basis where the chief consideration should be given

THE NEW YORK TIMES, THURSDAY, OCTOBER 4, 1923. 15

Dear R. H. Macy & Co., Inc.

In reply to yours of recent date –

In your series of interesting editorials about your institution, you recently used the editorial reproduced herewith entitled "They Wrote His Epitaph Too Soon." While it may not have been intended as a reply to our "Goodbye Dobbin" advertisements, we have been busily engaged in writing Dobbin's Obituary and therefore take the liberty of publicly answering your public statement.

They wrote his epitaph too soon

"Good-bye Dobbin!"

Yes—we have no horses!

Ward Electrics cut delivery costs 20% to 35%

Ward Electric Trucks

Those Desiring to Read the Full Text of This Advertisement Can Secure Copies by Addressing the Editor of the COMMERCIAL CAR JOURNAL

to the performance of the vehicle, what it will do for owner and not mainly from unit comparison basis.

Truck Sales Below Potential

The number of trucks sold is still way below the potential market. There is a reason for this. The motor truck manufacturer is not thoroughly cultivating his territory for new markets. Selling a truck owner is not obtaining a new customer. This does not seem to sink down deep in the minds of many truck sales organizations. Some recent entrants into the truck manufacturing field seem to believe that the way to get business is to announce that they are going to build trucks, and that every owner of a Smith truck is a prospect for his—the Jones truck. Many dealers secure their prospects' list from the States Registration first.

What are they doing to get new business? Is not the owner of a horse-drawn vehicle a logical truck prospect? He is the one whom the dealer should convert to motorized transportation. Many dealers are afraid to solicit his business. Why? Simply because it's so much easier to talk specifications to truck owner. It takes more initiative and study to sell the horse-owner a motor truck in most cases, than it does to sell the present truck owner a new truck, especially if the trade-in allowance is overdone, but nevertheless he can be sold and eventually will be.

The Horse-Drawn Fallacy

The old argument that the horse is cheaper than even the lightest and cheapest truck is a fallacy. Hallucination on the dealer's part is responsible for many horse-drawn vehicles cluttering the highways of our cities and towns. Many dealers have gotten into the frame of mind where they **think that it's no use** spending time on the horse owner. They look upon him as an impossible prospect. But have they made a systematic effort to sell that prospect?

How to Combat the Horse Argument

If the prospect has short routes with frequent stops to make, the electric truck is the weapon with which to combat the old horse arguments. If he has long hauls with few stops, sell him a gas truck. In any event sell motorized transportation.

If you are a dealer in the motor truck industry, you should have the "courage of your convictions."

There's a moral in this for the truck manufacturer and the dealer.

ASIDE from replying directly to the Macy Company this advertisement will undoubtedly create a desire on the part of many other concerns in New York City for information regarding Ward Electrics. This advertisement gives facts and figures which are convincing and which will make other concerns having the same convictions concerning horses, desirous of knowing the facts in the case. Such advertising copy creates a concerted interest.

Encourages Investigation

Here we have the Ward Company willing to have disinterested parties compare the cost of hauling between two entirely different forms of transportation, which indicates that this truck manufacturer is certain that his vehicles will do the work cheaper and better. He has the courage of his convictions. He is not putting up a lot of general claims or unproven statements. He is giving his sales organization something tangible to work upon. He is giving them concrete facts. All of which points to the moral which can be drawn from this advertisement that too many motor truck sales organizations are not equipped with the proper information—sales ammunition, as it is popularly called—with which to properly sell their product.

The Root of the Salesman Evil

In the retail end, we find a deplorable lack of information given to the motor truck salesman. No wonder that motor truck salesmen are up against it, so to speak. Salesmen are hired, given a drawing account and then told to go out and get the business. The salesman naturally follows the path of least resistance and tries to sell the first logical prospect, the truck owner. If he is lucky all is well and good. But, nine times out of ten, he drifts around aimlessly for a few weeks and eventually is discharged. He gets employment with another dealer and the same cycle of operations is repeated.

All of which is due to the lack of systematic effort on the part of the dealer and co-operation on the part of the manufacturer to thoroughly map out a sales campaign which will take into consideration the development of new prospects and not the reselling of the truck owner.

How to Make Advertising Pay

Much advertising done by the dealer—regardless whether paid for entirely by the dealer or proportionately by the factory—is simply so much money wasted. It would make very little difference whether an illustration of the Jones or the Smith truck were used, it would have very little effect upon the average truck buyer. How much more effective such advertising would be if the space were devoted to the accomplishments of the vehicle in a certain line of business. Wouldn't it be much more effective to tell the baker that your truck fitted with a special body could carry so many loaves of bread, that the body was entirely dustproof, that no odor from the exhaust could possibly reach the interior of the body, that special partitions make it easy to carry the bread, etc., etc., than simply a picture of a truck and a lot of generalities which he will read in every other piece of literature that he receives.

Analyze Operator Needs

Every business that has need for motor trucks has its transportation problems which the truck can meet. It is up to the dealer and the manufacturer to analyze the various fields and see how his truck fits in. If his trucks are not suited for certain work, it is simply wasting the salesman's time to have him call on such prospects. All of which brings us to the conclusion that if more effort were centered on the development of new prospects coupled with real facts and figures, many more motor trucks would be sold and the trade-in problem would be automatically eliminated.

How and Why Bus and Trolley Service Dovetail

Future Transportation Plans Demand Employment of Both Types. The Bus Fulfills Special Requirements

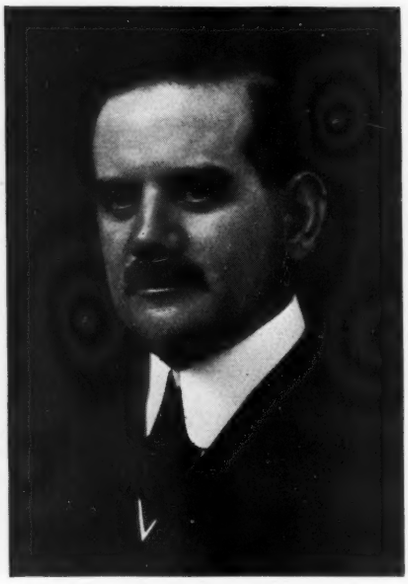
INCLUDED in the list of speakers who spoke in behalf of the automotive interests at the annual convention of the American Electric Railway Association, Atlantic City, N. J., Oct. 9, 1923, was Alfred Reeves, general manager National Automobile Chamber of Commerce. He deliverd a very impressive address touching the bus situation in all its ramifications. He employed the vast fund of information at his command from his long association in the automotive industry in effectively working out his main theme; the prime necessity of co-operation between bus and trolley interests. He also pointed out that in the bus lay the solution of mass transportation of people in our city streets since the trolleys could not economically give all the service that was required. He also explained that rubber-tired vehicles do not endanger the strongly and economically established steel-tired vehicle. Mr. Reeves' address was received with much interest and applause by his audience, which consisted mostly of electric railway representatives.

The following paragraphs extracted from Mr. Reeves' talk will give a comprehensive idea of the important angles touched upon and what the railroad men took back home with them to think over:

It is not my desire to survey what the trolley companies have done in the past—their good points or their bad points.

Public; Transportation; Purveyor

My thought is to draw a picture of the future—a picture which it seems to me, will have to be realized if the American public is to enjoy transportation to which it is entitled, and purveyors of transportation receive the reward which should go to those who properly perform a service so vitally necessary as the street transportation of America's ever increasing and ever restless population.



Alfred Reeves
General Manager National Automobile Chamber of Commerce

Each Change in Transport Has Brought Protests

Mass transportation in this country came first over the highways with the stage coach. Then came steam roads that paralleled the highways, and the stage coach owner protested. It was not long before the trolley came to parallel the railroad, undoubtedly developing more traffic, although railroad men felt that an injustice was being done them. Ere long came the passenger car and the motor bus on the 2,000,000 miles of highway in this country and the trolley protested, particularly when the universal use of these facilities came into the city.

When protest is made that highways are now built parallel to the rails, we should record the fact that the railroads were the first to parallel the highways. Some insist that the truck and bus have their road beds supplied at public expense, while the rail men have to pay to maintain their own right of way.

Isn't it a fact, however, that the rail men have a monopoly over their right of way, while the highways are open to everyone because they are a benefit to everyone and are paid by everyone? The railroad and the trolley have equal rights to use the highways.

The automobile industry and those who use its products, are probably the biggest tax payers in this country.

Last year we paid $114,000,000 to the Federal Government in excise taxes, while annually we pay not less than $215,000,000 to the States in registration fees, personal property taxes and gasoline taxes (the latter now effective in 37 States), with $6,000,000 more in wheel and privilege taxes, or a total of $335,000,000 which will probably climb to a total of $400,000,000 in 1923.

John E. Walker, former tax advisor to the U. S. Treasurer, states that of the $9,000,000,000 total tax burden of County, State and Nation in 1921, more than $700,000,000 or 8 per cent came from taxes levied against transportation—motor, steam and electric.

Monopoly Desirable in Urban Transport

Few will deny that the trolley supplies the best form for mass transpor-

Pertinent Bus Angles

By ALFRED REEVES

More than 100 trolley companies are now using more than 1000 buses.

If the buses had come first, how many of them could now be supplanted by trolley cars?

With the present congestion of traffic and concentration of population, trolley cars cannot properly handle all street transportation.

The trolley people, as experts in transportation, have a rare opportunity to enter the bus field giving a well-rounded service to the public.

Buses are the logical passenger carrying medium in sparsely settled regions, in many small cities, and for special types of high-grade service in large cities.

Many successful bus operations will continue independently, because they are supplying a service.

The public may be counted on to support that type of management which gives the best service.

Mass transportation in this country was first started over the highways which the railroads later paralleled.

Highways are open to everyone, while the rail men have a monopoly of their right of way.

Many trolley companies are realizing the fairness of seeing that the bus is not excessively taxed or submitted to hampering regulations, as it is a possible field of operation for the electric company.

The bus business is an infant. It is a member of the transportation family that cries for adoption. It should be adopted as an ally of the trolley.

tation. It is generally agreed that transportation in big cities can best be served by a monopoly, provided that monopoly is not abused, not over-capitalized, and is properly regulated by State authorities.

Our industry appreciates the hardships of the electric lines. There has been legislation far beyond what seemed necessary. There has been taxation almost to the confiscation point. There have been rulings that were almost impossible to obey.

During the past five years, you have also been faced with a new form of transportation, which has in many cases added to your income by increasing the number of passengers travelling; but at other times has undoubtedly cut into your earnings to a substantial degree.

But who is at fault?

We surely cannot blame the public for patronizing the most efficient means of transportation.

Low cost has not always been the answer because the average American is ever ready to pay extra to save time and secure comforts.

This is shown by the ten cent fare paid by 55,000,000 people last year who patronized the Fifth Avenue bus service in New York. Here is a company which caters to its patrons, and its riders would rise against any administration that attempted to treat it unfairly!

The public, I am sure, will gladly pay eight or ten cents for a special bus service even when the trolley fare is five cents, and it should be willing to pay extra where buses and trolleys are on a transfer basis.

Buses increased in numbers because they furnished a service. Some trolley leaders saw the development and put them on as feeders to their lines, while others declared opposition. There are probably 40,000 buses operating in America. More than 100 trolley companies are now using not less than 1,000,000 buses. In addition, there are 90,000 taxicabs. America is trained to ride on rubber tires.

The bus is a member of the transportation family, born of an emergency and certain to grow into a lusty youngster. It should be adopted as an ally of the trolley which we shall always have because the electric lines are still the best forms for mass transportation.

Trolleys Alone Cannot Handle Transport Needs

With the present congestion of traffic and concentration of population, the trolleys cannot properly handle all street transportation. They cannot afford to build in sparsely settled territories. They cannot supply the flexible movement of transportation offered by the trackless and less noisy motor vehicle which loads and unloads at the curb, while permitting other traffic to pass.

Nor can the bus do it alone. Think how many would be required to supplant the trolleys which last year carried 15,000,000,000 passengers which was 15,000,000 more than in 1921.

A combination of trolley and bus seems to be the real answer.

Many successful bus operations will continue independently because they are supplying a service. But many poor operations can be made a success by transportation experts from the trolley field.

In some instances it seems best for bus lines to be run independently, but in a broad sense it has appeared to use in the bus industry, that as experts the trolley people had a rare opportunity to enter the bus field and thus give the public complete transportation.

The Public Must Not be Overlooked

Whether trolley companies should own and operate motor buses, has been a much discussed question.

There are three parties in interest in this transportation problem—the public, the trolley companies and the bus companies.

The trolley company's interest in transportation lies in protecting its capital investment, securing new capital, caring for depreciation, returning proper dividends on securities, covering its general expenses, paying taxes and in meeting charges for paving between the tracks.

The bus operator's requirements are about the same except as to the paving charges, but these are off-set by registration fees, fuel taxes, and special impositions of one kind or another.

What is the answer?

It can be left to an unaided solution on the basis of economics, which after equalization of responsibility and opportunity, and with unlimited and uncontrolled competition, would mean a survival of the fittest.

Under such a plan, all would suffer, the public included, by the great destruction of capital involved.

On the other hand, one can hasten a solution and avoid wasteful competition by recognizing that in certain fields of street transportation the trolley is supreme in efficiency and economy. In others the bus holds a similar position. This demands that the two forms be co-ordinated.

The prime consideration, therefore, is to fix the fields of endeavor which each shall enjoy.

Public Supports Best Service

The necessity for co-ordination brings us to the question of whether the trolley shall own and operate buses, or whether a bus operator shall be under a control, independent of trolley management.

Legal and equitable considerations would, of course, enter into this question.

The public may be counted upon to support that type of management which gives the best service.

Trolley Attitude Toward Buses Not Always Understood

Many people have not appreciated that you trolley men have been taking the bus into your arms in order to round out a proper service for your communities.

They express the fear that if you take over the buses, it will be for the sole purpose of bringing about their elimination, and this is the one belief which the electric railway interests in this country must change if their entrance into this new field is to receive a proper welcome.

Service and not price is the real answer to transportation, and when I say service, I mean supplying service and not talking about it.

Many Towns Could Use Bus Better Than Trolley

Students of transportation assure me that with sufficient time to organize and a franchise that would induce investors to furnish money for the enterprise, there are many towns where the transportation requirements could be cared for as well, and possibly better, by bus companies than by trolleys, particularly if the bus companies were managed by experts in trolley transportation.

Legislation to hamper or destroy bus lines, will bring strong protests from the public. Let me urge you to unite with us in pointing out to the law-makers, the fallacy of such laws—especially so since the further you enter the bus field, the more you will suffer from excessive taxes or hampering regulations that may now be set up.

Rights of Those Now in Field Should be Protected

May I emphasize another point?

We believe that the power of the trolleys to acquire, own and operate buses, should be exercised largely in new fields.

It hardly seems equitable, except where there has been illegal or unjust competition, that they should be allowed to destroy bus transportation in the hands of others.

Final Type of Bus Not Yet in Sight

We are not yet sure of the proper types for the various kinds of bus service. Some bodies have been built entirely too wide and without respect for the rights of others on the highway.

While some of our manufacturers are showing models in your show on this Steel Pier that would seem almost ideal, we are looking to you and the bus operating companies to tell us the proper requirements.

We need your help and guidance, and in return, we tender all our facilities. Our industry is keen to co-operate collectively and individually.

Motor Manufacturers Interested in Customer's Welfare

The National Automobile Chamber of Commerce has an interest in the prosperity of those who purchase its product. We try to help them to obtain fair treatment at the hands of the law-makers and the general public and hope to do for bus operators, what has been done for users in the private automobile field.

While our industry has been keenly competitive, it has been wonderfully co-operative to the end that the public may receive the best in flexible transportation units.

Evidence of this is shown by the fact that for nine years we have been operating under a cross-licensing agreement by which the manufacturers interchange patent rights under more than 600 automobile patents, without the payment of money royalties, while these same manufacturers, to a more or less degree, follow

some 122 standards in materials and construction that make for lower manufacturing costs and lower replacements expense to the car owner.

Industry's Attitude Toward Regulations

We feel our industry is in accord with yours, so far as it relates to state supervision of common carriers. More than two years ago, we declared in printed form that control over motor vehicle common carriers if deemed necessary should be placed in existing state commissions and that as a prerequisite to operation the owner should be obliged to obtain a certificate of public convenience with the proviso that lines in actual operation shall prima facie be regarder as necessary.

Our declaration called for liability insurance, with special or extra fees utilized for highway maintenance, and advocating legislation to enable steam railroads and trolleys to own and operate the motor vehicle in conjunction with their regular line of business.

I am here to tender the offer of committees of engineers and of executives, to confer with representatives of your organization on matters of mutual benefit; all to the end that the public may be properly served and that trolley and bus companies may receive fair treatment for their security holders and their employes.

My faith in the good sense of American business men, together with your kindly reception of a representative of the automobile industry, leads me to believe that this meeting marks a new era in local transportation in this country.

Co-operating With the Purchaser in Body Designing

A NEW creation in commercial bodies for the modern motor truck chassis has just been completed and delivered to the Hood River Apple Growers' Association, Hood River, Oregon.

The body is designed for the express purpose of advertising, exhibiting and selling the famous Blue Diamond brand of Hood River apples throughout the United States, bringing samples of the fruit directly from the grower to the distributor.

The body is a development of an idea which originated in the mind of J. R. Nunamaker. A. F. Steele, general manager, and A. F. Clarke, sales manager for the Hood River Apple Growers' Association, quickly accepted the idea as an excellent medium for increasing the sale and distribution of Hood River apples.

E. N. Howe, district representative for Graham Brothers trucks, designed the body and prepared the plans and specifications. He had at his command the special body department maintained by Graham Bros. It includes a staff of consulting engineers, who duty it is to study each individual transportation problem and solve it in the most advantageous manner for the purchaser.

In working out the design special attention was given to appearance, following the approved lines of a low passenger car, including that same touch of convenience and comfort found only in the conventional sedan or coupe.

In the sample case compartments where Yellow Newtons, Delicious, and Spitzenberg apples, of the Blue Diamond brand, wet the appetite of the spectator, the cabinet maker has shown his work of art—arranging the polished hard maple display cases on an angle of fifty-five degrees and housed in a coved recess finished in white enamel and showered with light from three high powered electric bulbs.

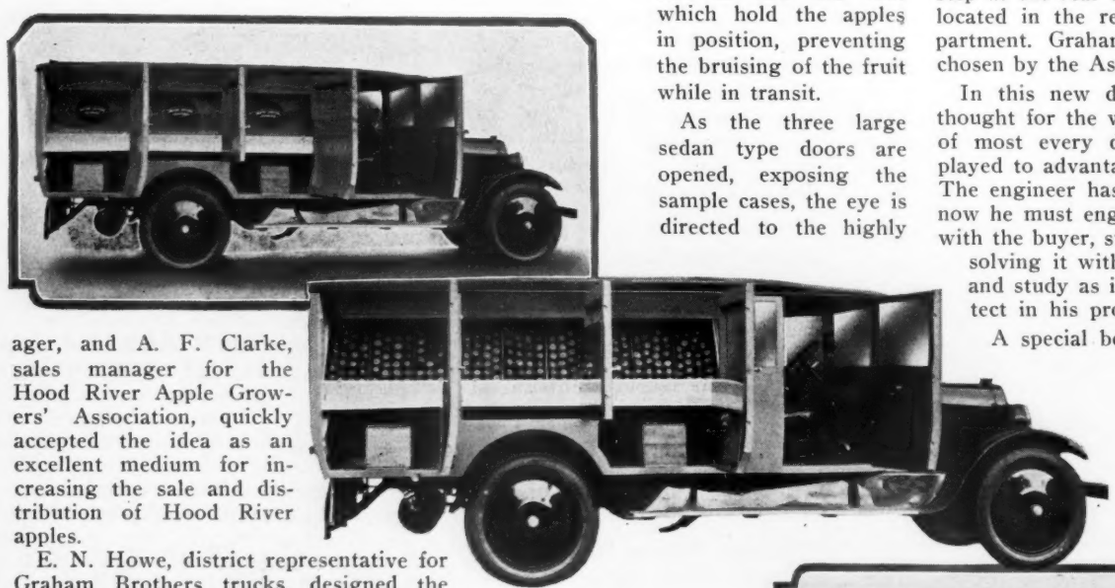
The cases in which the apples are exhibited are lined with thick, dark colored felt as are the lids which hold the apples in position, preventing the bruising of the fruit while in transit.

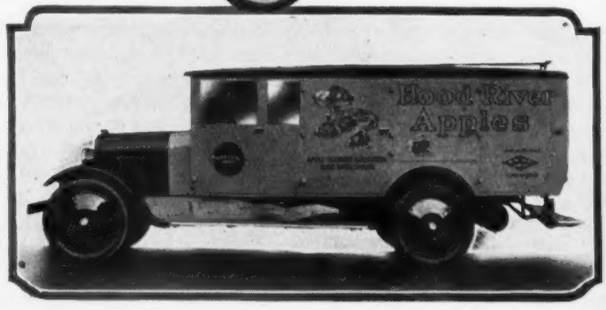
As the three large sedan type doors are opened, exposing the sample cases, the eye is directed to the highly polished surfaces of the sample case lids on which appear the Blue Diamond Trade Mark. The lids are then removed to their holding positions on the inside of the doors, and the exhibit is ready for inspection.

Space is provided for sixteen standard boxes of apples, directly under and back of the sample cases. Provision is also made for the carrying of two extra disk wheels and tires on a second floor. An attic, or the third floor, is available for advertising matter, as well as a compartment for the salesman's personal effects, the latter being accessible from a folding step at the rear and a compartment door located in the rear of the driving compartment. Graham Brothers' chassis were chosen by the Association.

In this new design there is food for thought for the wholesaler. Merchandise of most every description may be displayed to advantage in a car of this type. The engineer has perfected the chassis—now he must engineer the body, working with the buyer, studying his problem, and solving it with the same thought, care and study as is exercised by the architect in his profession.

A special body department is maintained by Graham Bros. The duty of this department is to study each individual transportation problem and solve it in the most advantageous manner.





Meeting the Purchasers' Needs With a Specially Designed Body.

This job was designed for the express purpose of advertising, exhibiting and selling Blue Diamond brand of Hood River apples, direct from grower to distributor.

Truck Tire Business *Can* be Run at a Profit

Better Business Methods; Reasonable Allowances and Sincere Association Co-operation

By A. V. COMINGS

AN exclusively motor truck tire business CAN be run at a real profit. Here is the story of a man who is making money out of his business, and he tells HOW and WHY.

For personal reasons he does not want COMMERCIAL CAR JOURNAL to use his name, but he is giving to readers of this publication an outline of the reasons why he is making money selling truck tires.

"I have been in the truck tire business for years," said this dealer to a representative of this journal. "I have been located in this city (a midwestern city of about 350,000 people) all of that time. And I have learned that there is only one way to make money in this business.

"That way is to divide my business into several departments, and then MAKE EVERY DEPARTMENT PAY ITS SHARE OF THE PROFIT. Each department will contribute its small share, but the aggregate of all the departments makes my business a paying business.

"If I could put my business on a cash basis, then I could make a much better profit, but that seems impossible now. Truck owners are so busy paying the installments on their trucks, which must be met if they are to keep their machines, that they often have little enough left to pay their tire bills. I have had as high as $50,000 invested in this business including outstanding accounts at times, and that is more than the gross sales warrants.

Divided Into Departments

"My business is divided up into departments as follows:

"Solid tires, pneumatic tires, hydraulic press work, tire service, used tires and miscellaneous income. The income and cost of these departments I keep a daily record of, by a simple system, so that I know at the end of each day exactly the sales, the cost, and the net profit from each.

"By this method I can keep the very closest accounts of my business with the result that I can strengthen weaknesses before they eat too deeply into my profits. I consider a strict accounting system an absolute necessity if a tire dealer expects to be successful.

"My overhead used to be as high as 20 per cent, but by careful planning and pruning I have reduced it until today it runs closer to 15 per cent. This is high enough, but it seems to be about the best I can do at present, under existing conditions.

"I used to have several salesmen, but at from $225 to $250 per month, with the furnishing and upkeep of their cars, and other expenses, my sales expense ran away high. So now I have two men, both first class salesmen, and they are on the job all the time, selling new tires, tire service, and press work.

Dependability

"A lot of my tire press work I get from motor truck dealers, who have learned that they can depend on me absolutely, and therefore send me many customers I would not otherwise reach. They also have their own tire pressing done in my shop.

"My tire repair shop, on the second floor of my building, I try to keep up to date and efficient, and above all things, CLEAN and free from rubbish, old tires and junk of any kind. It has first-class equipment for making all kinds of solid and pneumatic truck tire repairs, and the two men I keep working there, make it possible for me to do the very best repair work, at a small profit.

"I carry only a small stock of tires, just enough to meet immediate demands, for the Firestone factory branch is nearby and I can always get anything I want in tires on very short notice. This small investment in tire stock makes possible a rapid turnover, with only a small amount of money tied up.

Sincerity Essential Association Requisite

"I used to belong to the tire dealers' association here, but I don't any more. They came to me and told me how we could all get together, conduct our business on good merchandising lines and not cut prices, and it sounded fine to me. I'd like to run my business just that way. And then right away they began to cut prices among themselves, give big allowances on old tires, and we were right back where we started. Since then I haven't belonged.

"I think there is a great opportunity for the tire factories to help their dealers to better business profits, but until the tire manufacturers get together on some sort of ethical basis, I don't see much hope for help from the factories. Why, it was only a few days ago that I had a sale practically made of two big solid truck tires on a clean, profitable basis, and along comes the local branch of one of the other tire companies and gave my customer an allowance of $40 for an old solid he had on one of his rims that wasn't worth $5. Of course I lost the sale. A small tire dealer can't buck a factory branch.

What Chance Has the Tire Dealer?

All Records Broken in Demand for Space at Good Roads Show

Two Hundred and Thirty of the Leading Manufacturers of Road Building Equipment, Supplies, etc., Assigned Space at the Good Roads Show

UNPRECEDENTED demands for space in the 1924 Road Show of the American Road Builders' Association, to be held January 14th to 18th in Chicago, greatly complicated allotments to applicants at the drawings on November 1st and 2nd. Requests were filed for more than three and one-half times the main floor space available in the Coliseum. Applications for space in the Coliseum Annex, the ball-room, and the Greer Building also were much in excess of the floor area.

The allotments were in charge of the executive committee, and C. M. Upham, convention and road show manager, of the American Road Builders' Association, and of the executive committee of the Highway Industries Exhibitors' Association. The two executive committees were assisted by an advisory committee of six, each representing one of the six main classes of exhibitors. Working in close co-operation, these officials developed methods of reduction in space and choice of location based on several definite factors. These methods were then applied to all applications.

About two hundred and thirty of the leading manufacturers of equipment, materials, and supplies used in building and maintaining highways evidently have come to recognize that the road builders of the country consider the Road Show the one big chance of the year to get up-to-date on all that is new in the industry.

Following is a list of those to whom space has been allotted. Various changes may be made in this list, but additions will be possible only in case applicants do not accept space allotted to them:

Galion Iron Works
Koehring Co.
Holt Manufacturing Co.
Blaw Knox Co.
Wood Hydraulic Hoist & Body Co.
Kinney Manufacturing Co.
Shaw Enochs Tractor Co.
The White Co.
Thew Shovel Co.
Barber Greene Co.
General Motors Truck Co.
Equipment Corp. of America
Novo Engine Company
Fate-Root-Heath Company
Hvass Co.
Heil Co.
Erie Steam Shovel Co.
Russell Grader Mfg. Co.
C. H. & E. Manufacturing Co.
The Barrett Co.
Burch Plow Wks. Co.
Sauerman Bros.
Monarch Tractor Co.
Beach Manufacturing Co.
Koppel Ind. Car & Equip. Co.
American Casting Co.
Haiss Manufacturing Co.
Sterling Motor Truck Co.
Domestic Engine & Pump Co.
Climax Engine Co.
Geo. B. Whitcomb Co.
National Paving Brick Co.
Milwaukee Locomotive Mfg.
Kelly-Derby Co.
American Cement Mfg. Co.
Jaeger Manufacturing Co.
Granite Paving Block Mfg. Assn.
Construction Machinery Co.
The Texas Company
The Western Wheeled Scraper Co.
Insley Manufacturing Corp.
Garford Motor Truck Co.
Bear Tractors, Inc.
Marsh Capron Co.
Baker Manufacturing Co.
Smith Engineering Works
Austin Manufacturing Co.
Buda Company
L. P. Green Co.
Asphalt Association
W. & L. E. Gurley
Public Works Journal
Concrete Steel Company
Ingersoll Rand Co.
Cleveland Tractor Co.
Davenport Locomotive Wks.
Byers Machinery Co.
Lakewood Engineering Co.
Austin Western Road Machinery Co.
T. L. Smith Co.
Foote Concrete Machinery Co.
The Hug Company
International Motor Co.
Pawling & Harnischfeger
Elgin Sales Corporation
J. D. Adams Co.
Chain Belt Co.
Austin Machinery Corp.
Bucyrus Company
Northwest Engineering Co.
Heltzel Steel Form & Iron Co.
Le Roi Company
The Osgood Co.
Oshkosh Manufacturing Co.
Portland Cement
Lee Trailer & Body Co.
Metal Form Corporation
Littleford Bros.
Link-Belt Co.
National Highway Assn.
Avery Co.
Autocar Company
Dunn Wire Cut Lug Brick
A. B. French & Co.
Republic Motor Truck Co.
Philip Carey Co.
Warren Bros. Company
Erie Steel Construction Co.
Barber Asphalt Co.
Anthony & Co.
Engineering News Record
Schramm, Inc.
C. L. Best Tractor Co.
W. S. Tyler Co.
Hercules Corporation
Clay Products Association
American Tar Products Co.
Erwin Greer
Stroud & Company
F. P. Cummer & Son Co.
Waukesha Motor Co.
East Iron Machinery Co.
Owen Bucket Co.
The American City
Manufacturers' Record
Wiard Plow Company
Engineering and Contracting
Carbic Mfg. Company
American Production & Trading Co.
Barnes Manufacturing Co.
Mead-Morrison Mfg. Co.
Electric Wheel Co.
The Bates Machinery & Tractor Co.
Ransome Concrete Mchy. Co.
Black & Decker Mfg. Co.
Borg & Beck Company
R. J. Lewis Mfg. Co.
Truscon Steel Co.
Universal Crane Co.
Huber Mfg. Co.
American-Vibrolithic Corp.
Graham Bros. Trucks
Chicago Motor Truck Mfg. Co., Inc.
O'Connell Motor Truck Co.
Archer Iron Works
Watson Truck Co.
Good Roads
Beaver Manufacturing Co.
Petroleum Motor Corp.
Turner & Moore Mfg. Co.
Pittsburgh Testing Laboratory
W. B. Lower Co.
Full-Crawler Co.
Wellman-Seaver-Morgan Co.
Hercules Motor Co.
Associated Penna. Constructors.
Overman Cushion Tire Co.
Singer Steel Casting Co.
N. P. Nelson Iron Wks.
Sweet Steel Company
Chicago Tube & Iron Co.
Hydraulic Hoist Mfg. Co.
American Hoist & Derrick Co.
Trailmobile Co.
Service Motor Co.
Dow Chemical Co.
G. H. Williams Co.
Simplicity Screener Mfg. Co.
Root Spring Scraper Co.
Kalman Steel Co.
Oklahoma Eng. & Fdy. Co.
Am. Gas Accumulator Co.
Automatic Signal & Sign Co.
American Willite Co.
Taylor Wharton Iron & Steel
Bitucrete Co.
Complete Service Co.
American Malleable & Casting Co.
Sullivan Machinery Co.
Gray Tractor Co., Inc.
Armco Culvert & Flume Co.
E. D. Etnyre & Co.
Kentucky Rock Asphalt Co.
Hastings Pavement Co.
Asphalt Block Pavement Co.
Stockland Rd. Machinery Co.
Handy Sack Bailer Co.
Four Wheel Drive Co.
Wehr Co.
Oshkosh Motor Truck Mfg. Co.
Wyoming Shovel Wks.
Thos. Elevator Co.
Highway Maintainer
Marion Steam Shovel Co.
B. M. Cropp Company
Williams Patent Crusher & Pulv. Co.
W. E. Godwin Company
Clyde Iron Works
Buckeye Tractor Co.
Noble Motor Truck Corp.
Essco Manufacturing Co.
C. S. Johnson Co.
O. K. Clutch Co.
American Manganese Steel
Orr & Sembower
Curtis Pneumatic Mchy. Co.
Fuller & Johnson Mfg. Co.
Universal Crusher Co.
Butler Equipment Co.
Troy Trailer & Wagon Co.
Specialty Engineering Co.
Van Dorn Co.
Buhl Company
Western Contractor
Interflash Signal Co.
Lufkin Rule Co.
American Bosch Magneto Co.
Union Iron Products Co.
U. S. Asphalt Refining Co.
Hgwy. Engr. & Contractor Co.
Twin Disc Clutch
Racine Radiator Co.
Illinois Division of Hgwys.

Successful Commercial Car Salesman Tells About His Methods of Getting Business

By FRANK H. WILLIAMS

"TO my mind," said a particularly successful commercial car salesman in telling about the method he employs in gettin business, "there is nothing so highly important for the commercial car salesman as that of knowing just exactly where he can expect to get business in his town.

"I used to operate on the method of going around and digging up prospects on a sort of hit or miss method. I'd find and sell prospects where I could, although I never made any effort to line up the whole proposition in a careful and definite manner. I must say that I got a considerable amount of business even in those days.

"But as competition in the selling of trucks became keener I saw that I would have to hit on a better method. In an effort to discover this method, I hit on the old reliable, the local city telephone directory, but with an entirely new idea behind it. The familiar classified section presented the idea.

"In thumbing over the alphabetically arranged industries, I counted the various businesses listed therein.

"How many different businesses do you suppose I found there? And I might add that this town has about 100,000 population. There were just, 385 by count!

"Of course I was much surprised to learn that there was such a big industrial representation in this city, but what impressed me most was the potential truck market which opened up to me. Curiosity prompted me to ascertain how many of these businesses I had sold. The thought occurred to me that there might be a number of houses in the city which have use for trucks, but which I have not solicited or sold.

"It did not take me long to go through the list and check off those businesses to which I had sold trucks. The result was astounding. There were only eighteen different lines of business to which I had sold trucks during my entire career as a commercial car salesman and I don't mind telling you that I have been in this business right from the very start. Think of that—out of nearly 400 lines of business I had sold only eighteen.

"This confined area of my activity is probably explained by the fact that I had concentrated on the more obvious lines, such as groceries, department stores, express companies, etc. I had never made any effort to go after lines with which I was unfamiliar or which didn't seem to offer any very great possibilities.

"After satisfying myself as to the possibilities of increasing my field I waded through the list once again, eliminating all those lines not having a real need for a transportation unit. This was not an easy task. Some of the classifications were designated by superficial headings that on the face could be checked off as not containing companies eligible as truck prospects, but which after more careful survey disclosed many of them as really logical buyers. For instance, I could check off dentists as not having any need for trucks but I could not check off a dental supply company as not having any need for them.

"When I had gone through all of the lists I discovered that there were 51 lines of business in the city which might possibly use trucks which I had never solicited during all of my career. Briefly here was apparently an entirely unexplored field which should yield splendid results.

"But I figured that it would not be good policy for me to entirely discontinue the methods I had been employing in the merchandising of trucks because these methods were bringing splendid results and because the new plan might not bring as good results. For that reason I decided to solicit at least three of the 51 businesses each day in addition to doing my regular solicitations.

"Of course this meant a considerable amount of additional work, but what if it did if the results in the way of increased sales proved to be entirely satisfactory?

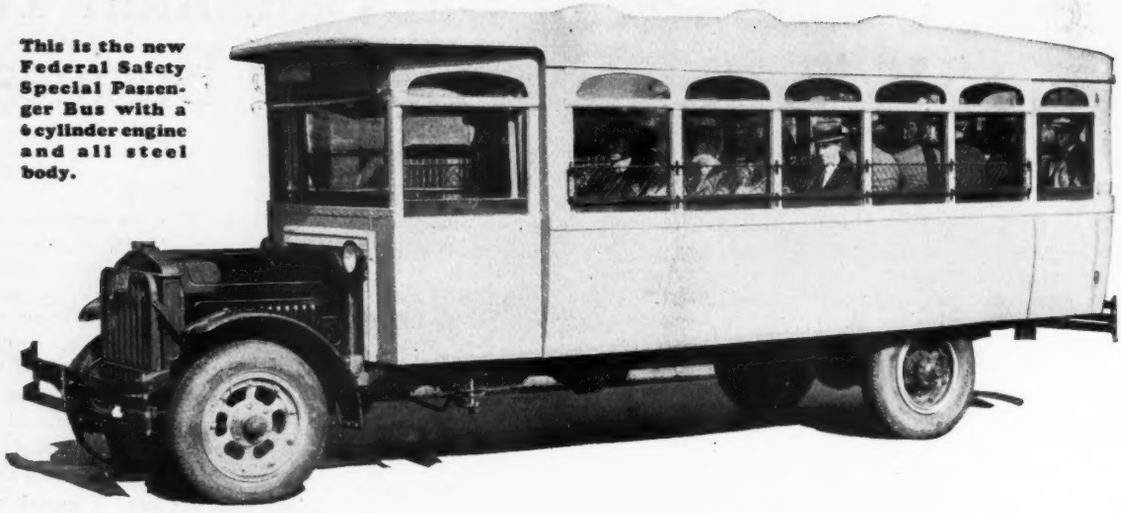
"Of course the best plan in soliciting these new lines of business was to pick out the most likely prospects in each line and solicit these prospects first and then secure from these prospects the names of other good prospects in their own lines.

"That was the method I employed and I don't mind telling the world that right away it brought in some mighty good results in the way of increased business.

"It took me over a month to solicit at least one firm or individual in each of the fifty-one lines of local business on which I hadn't previously called and then when I had finished soliciting one each of all these different lines of business I started in soliciting the next best prospects in all these lines. This, too, took me quite a long time and then when I had finished with them other prospects in the lines had developed and so the proposition of going after business in all these lines which hadn't previously been tackled became a regular thing with me and became a regular source of getting more business.

"Really, this simple proposition of going through the classified pages of the local telephone directory opened up a new vista to me which made me a star salesman instead of just an ordinary salesman. It gave me a good outlook on ALL the possibilities in my for the sale of commercial cars instead of letting my viewpoint be wholly determined by just what my memory could recall in the way of various local businesses.

"To my mind it is highly important for the commercial car salesman who wants to make the biggest possible success of his business to see all of the possibilities in it so that he won't get discouraged over the apparent lack of prospects. When a salesman hasn't any firm grip on the whole proposition he is likely to become somewhat dismayed when he looks around him and can't seem to see any single place where he could solicit business and possibly make a sale. But when the salesman finds out, as I did, that there are a tremendously larger number of businesses in his city than he had any idea there were and when he starts systematically soliciting patronage from all the most likely businesses then he is more likely to feel that the days aren't long enough in which to do all that he wants to do. All of which naturally makes business much better for him than it would otherwise be."



This is the new Federal Safety Special Passenger Bus with a 6 cylinder engine and all steel body.

FEDERAL dealers are in an enviable position to take advantage of the growing popularity of bus transportation.

A complete line of busses including six cylinder models, as well as a different capacity for every commercial requirement is available for FEDERAL dealers.

No sales get away because FEDERAL keeps abreast of transportation progress. Our fellows make more money by having those models which are in demand.

Write for folder B-4 on Modern Bus Equipment

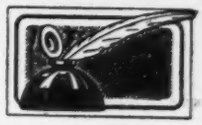
Another **FEDERAL**

"Means Another Satisfied User"

THE FEDERAL MOTOR TRUCK COMPANY
Detroit, Michigan.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

EDITORIALS



Trucks *vs.* Passenger Cars

THE industry acknowledges that it has done a great deal of unprofitable trading in cars and trucks, and it is anxious to try out this and that plan to rid itself of the used car burden. Although there is more trading done in passenger cars than trucks, that is simply because the market is greater. There may be some legitimate reasons for trading passenger cars. Take the changes in models for instance. The passenger car owner wants a new model of the same make because of a few refinements; the upholstery in his old car may not suit him; he likes certain features of another make that tickles his fancy and so on. There are plenty of reasons why the passenger car owner wants to trade in his car before it has really become worn out through service.

But when a motor truck owner is ready to dispose of his truck he does so for one particular reason, in ninety-nine cases out of a hundred. His truck is worn out—it's shot to pieces. He acknowledges that, when he is in the market for a new machine to replace the old one. Why then should the dealer offer a lot of money for a piece of junk? As long as a motor truck is giving service and can be kept in serviceable condition at a reasonable figure the owner will not buy a new truck. But when the truck is continually being laid up for repairs, isn't that sufficient evidence that it is worn out? Why then should the dealer knowingly pay for the privilege of buying junk? That is just about what he does.

On the other hand, the dealer may have a customer who needs a heavier model, and has to take the owner's present vehicle in trade. All right, then offer the market value and no more. If the truck needs overhauling let the owner pay for it. That after all is what any so-called plan for selling used vehicles amounts to. All the plans in the world will not help the dealer from losing money on trade-ins, unless the dealer has the business ability to sell the owner on the actual market value of the used vehicle.

The trade-in problem wouldn't be at all serious if factories and dealers would more accurately estimate their market. If a dealer knows that he can dispose of twenty-five trucks a year without trading his head off, why shouldn't he let the factory know that in unmistakable terms, rather than have twice that number wished on him, with the alternative of doing a lot of wild trading to get rid of them. But if the dealer can't furnish facts regarding his territory, it is but natural for the factory to overload the dealer. The truck must be sold on a transportation basis. Forcing sales to boost production will not build up a permanent dealer organization.

Abolishing List Prices

NOW that a few large tire manufacturers have decided to discontinue issuing consumers' price lists, more are expected to follow suit. What will be the outcome of this policy remains to be seen. The dealers of any certain make will have to work in close harmony on prices, otherwise some dealers will suddenly discover that they are having more competition from dealers in their own line than they have ever had before from competitive makes.

Furthermore, the tire dealer must guard against giving one customer preference over another. Whether the factory sets the list price or not, it will be necessary for the dealer to carefully estimate his list prices, and stick to them consistently, otherwise he will be no better off than before. It all reverts to the first principles of successful merchandising, which is that of judging the market as closely as possible. Playing safe should be the tire dealer's motto. The time for gambling and guess-work must be eliminated. The tire dealer who will carefully estimate his requirements and stop playing the tire market cannot help become a successful merchant. Undoubtedly the elimination of list prices will stimulate some dealers toward selling tires on a quality basis rather than from the discount angle.

$700,000,000 will be spent for road improvement during 1924. If this means anything to you, Mr. Dealer, don't miss the December Good Roads Show Number.

News of the Trade in Brief

Reeves Heads National Association of Trade Executives

At its convention in Chicago in October the American Association of Trade Executives elected as its president, Alfred Reeves, general manager of National Automobile Chamber of Commerce.

This organization consists of the managers or other executives officers of 158 trade associations producing everything from asphalt to zinc and representing the key industries of the country.

These trade associations handle scientific research work in materials; analyze markets and the expansion of markets, both domestic and foreign; supply information for legislative needs; co-operate with railroads in the transportation of products; disseminate credit information; standardize on design, materials, trade names, and customs, and engage in scores of other activities that will raise the ethics of business, decrease production costs and bring broader markets by lowering prices to the public.

Receiver for K. & M. Manufacturing Company

H. D. Maddock has been named as receiver for the K. & M. Manufacturing Co., of Kenosha, Wis., involuntary bankruptcy proceedings having been instituted against the company in October. K. & M. manufactures steering gears, dies, tools and metal specialties.

FEDERAL BUDGET SYSTEM SHOULD BE MAINTAINED

The following resolution was unanimously passed by the Board of Directors of the Motor and Accessory Manufacturers' Association at its October meeting, and made public by W. O. Rutherford:

***Whereas,* there are indications in Washington that efforts may be made in the next Congress to tear down the national budget system which the late President Harding introduced more than two years ago, and**

***Whereas,* it is generally agreed by students of economics and government, and by business men, that the budget system thus created was one of the most constructive reforms adopted by the Federal government, bringing, direct and tangible benefits to the country at large, reducing taxation, and enhancing the efficiency of government, now therefore be it**

RESOLVED, that the Motor and Accessory Manufacturers Association is opposed to any legislation calculated to impair or nullify the federal budget system, or designed to restore the old arrangement of government departmental expenditures which resulted in extravagance and inefficiency.

Klinedinst Made Timken Advertising Manager

L. M. Klinedinst, assistant manager of sales of the Timken Roller Bearing Co., Canton, Ohio, in addition to his duties in that position he has been made advertising manager succeeding R. E. MacKenzie, who has resigned after having served as advertising manager for the past four years. Carter Miller who has been connected with the Timken Co., for nearly five years, and recently as district manager of the Service Division, will be actively in charge of the Advertising Department as assistant advertising manager.

Coincident with these appointments is the announcement that the Fuller and Smith Co., Cleveland, Ohio, will act as advertising counselors to succeed the Charles H. Fuller Co. of Chicago. H. J. Porter, manager of sales, states that the change of agency was brought about by a desire to have the agency connections in closer proximity to the home office, in an endeavor to simplify the detail operations of the department.

Motor Wheel Surplus Large

A surplus of $2,657,993 is shown by the report filed by the Motor Wheel Corp., of Lansing as of June 30, 1923. The surplus as of December 31, 1922 was $2,136,-251.

Coming Events

CONVENTIONS

Chicago, Ill, January 14 to 19, 1924—Annual convention and good road show of the American Road Builders' Association, Congress Hotel, Coliseum and Greer Bldg. S. T. Henry, Chrm. Publicity Committee, 37 W. 39th St., New York City.

Columbus, Ohio, December 5 and 6, 1923—Annual convention of the Ohio Automotive Trade Association at the Hotel Deshler, E. J. Shover, Secy-Mgr., 404 Central National Bank Bldg., Columbus, Ohio.

Dayton, O., November 20 and 21, 1923—Factory Service Managers' Meeting of the National Automobile Chamber of Commerce, H. R. Cobleigh, Secretary of Service, N. A. C. C.

Detroit, Mich., January 22 to 25, 1924—Annual Meeting of the Society of Automotive Engineers.

Detroit, Mich., May, 1924—First International Motor Transport Congress, National Automobile Chamber of Commerce, G. F. Bauer, secretary of Foreign Trade Committee, N. A. C. C.

Detroit, Mich., November 21, 1923—Convention of the Motor Truck Industries, Inc.

New Orleans, La., April, 1924—Spring convention of The Automotive Equipment Association.

St. Louis, Mo., December 10, 1923—District meeting of the National Automobile Dealers' Association for the St. Louis District.

SHOWS

Albany, N. Y., February 16 to 23, 1924—14th annual show of the Albany Automobile Dealers' Assn., Inc. Passenger cars, trucks, tractors and accessories, State Armory, J. B. Wood, Mgr.

Boston, Mass., March 8 to 15, 1924—22nd annual show of the Boston Automobile Dealers' Assn., Inc., and the Boston Commercial Vehicle Dealers' Assn., Inc. Passenger cars, trucks, tractors and accessories. Mechanics Bldg. Chester I. Campbell, Mgr., 5 Park Sq.

Buffalo, N. Y., January, 1924—23rd annual passenger car and truck show of the Buffalo Automobile Dealers' Assn., 74th Regt. Armory, Carlton C. Proctor, Mgr., Hotel Statler.

Chicago, Ill., January 14 to 19, 1924—Annual road show of the American Road Builders' Association, at the Coliseum and Greer Bldg, Charles Upham, Show Director, Raleigh, N. C.

Chicago, Ill., January 26 to February 2, 1924—24th annual National Chicago show of the National Automobile Chamber of Commerce, Inc., Coliseum and First Regt. Armory. Passenger cars and accessories. S. A. Miles, Mgr., 366 Madison Ave.

Cincinnati, Ohio, November 17 to 24, 1923—Automobile, Accessory and radio show of the Cincinnati Automotive Trade Association, Masonic Hall. John J. Behle, Mgr.

Cleveland, O., January 19 to 26, 1924—Annual show of the Cleveland Automobile Manufacturers' and Dealers' Association at Cleveland Public Auditorium, Herbert Buckman, Mgr., 5005 Euclid Ave.

Cumberland, Md., March, 1924—7th annual show of the Automobile Dealers' Association of Cumberland, New Ford Bldg. Passenger cars.

Detroit, Mich., January 19 to 26, 1924—23rd annual show of the Detroit Automobile Dealers' Assn., Convention Hall. Passenger cars, trucks and accessories. H. H. Shuart, Mgr.

Indianapolis, Ind., March 3 to 8, 1924—27th Semi-annual show of the Indianapolis Auto Trade Assn., Auto Show Bldg. (60,000 sq. ft.) Passenger cars, trucks and accessories. John Orman, Mgr., 338 N. Delaware St.

Newark, N. J., January 12 to 19, 1924—Annual show under auspices of the N. J. Automobile Exhibition Co. at the 113th Infantry Armory. Clyde E. Holgate, Mgr.

New York, N. Y., January 5 to 12, 1924—24th annual automobile show under the auspices of the National Automobile Chamber of Commerce, 8th Coast Armory. Passenger cars and accessories. S. A. Miles, Mgr., 366 Marlin-Rockwell Bldg., 46th and Madison Ave., New York City.

Oakland, Cal., January 12 to 19, 1924—6th annual show, Motor Dealers' Division of the Alameda County Automobile Trade Assn., Municipal Auditorium (33,000 sq. ft.) Passenger cars, trucks and accessories. Robert W. Martland, 407 Pacific Bldg.

Portland, Me., March, 1924—11th annual show of the Portland Automobile Dealers' Assn. Passenger cars, trucks, tractors and accessories, Exposition Bldg. Howard B. Chandler, Mgr.

San Francisco, Cal., February 16 to 23, 1924 8th annual show of the Motor Car Dealers' Assn. of San Francisco, Exposition Auditorium. Passenger cars, trucks, tractors, accessories, special tops and bodies. G. A. Wahlgreen, Mgr. Humboldt Bank Bldg., San Francisco.

Trenton, N. J., February, 1924—9th annual show of the Trenton Automobile Trade Assn. Passenger cars, trucks and accessories, Second Regt. Armory.

Waterbury, Conn., January 14 to 19, 1924—Annual automobile show of Waterbury Automotive Dealers' Assn. at State Armory.

Factory Service Managers to Convene at Dayton

The semi-annual factory service managers' convention, which is sponsored by the National Automobile Chamber of Commerce, will be held at Dayton, Ohio, November 20 and 21. The service committee of the N. A. C. C. has arranged an excellent program for the two days. There will be two sessions daily. While the program was not completed at the time of this writing a number of interesting subjects have been chosen.

R. E. Carlson, Bureau of Standards, will read a paper on the regulation of headlights, to be followed by a discussion on the evils of headlight dimming, an important subject in these days of Safety First campaigns. The afternoon of the first day will be given over to the following subjects: "What Lessons of Value to the Engineer Has the Flat-Rate System Developed?" "In What Way Can the Engineer Co-operate to Make the Flat Rate More Successful?" "Examples Showing a Successful Method Employed by One Company to Assist the Engineer to Correct Faults in Design."

On Wednesday morning the opening paper will be "The Evils of Crankcase Dilution and How to Educate the Public." "What the Engineer Can Do to Help the Public," "Selling Service." In the afternoon there will be three papers, namely, "What Part Can the Engineer Play in Helping to Reduce Repair Costs by Eliminating the Need of Costly Tools," "Electrical Repair Problems as Encountered by the Garage Repairman," and "What the Engineer Can Do to Simplify Electrical Repairing."

In a sense it will be a joint meeting of members of the S. A. E. as a number of engineering subjects will be presented.

Many of the delegates will remain until Thursday when a program of visits to a number of automotive plants in Dayton and vicinity will be arranged. The convention was set for the preceding week but the date was changed so as not to conflict with the A. E. A. show at Chicago.

Smith & Wilson, Inc., Organize Merchandising Agency

The formation of a marketing organization to be known as the Smith & Wilson, Inc., marketing counselors, 801-2-3 J. F. Wild Bldg., Indianapolis, Ind., has been announced by Lon R. Smith, president of the new firm.

Mr. Smith is widely known in the automobile industry. He was formerly western representative of the Eisemann Magneto Corp.; sales manager of the Buda Company; vice-president in charge of sales and advertising of the Midwest Engine Co. and vice-president and general manager of the Lubac Corp.

Associated with Mr. Smith is Fred Wilson formerly of Coca-Cola Company; Willys-Overland Co.; sales manager of the Tractor Division, Midwest Engine Co. and sales manager of the Stutz Motor Car Co. The third member of the group is James J. Gavin, Jr., a prominent attorney of Indianapolis.

Smith & Wilson, Inc., will offer to its clients (1) distributing service, (2) merchandising and marketing service, (3) manufacturers' representative service, (4) consultation service and (5) special service. The officials of the company plan to locate in 25 and possibly 50 of the most important distributing centers, district representatives who will make direct selling contact in their particular field.

CHARLES P. STEINMETZ

The automobile industry unites in paying homage to the passing of Dr. Charles Proteus Steinmetz, who died October 26 at Schenectady. His contributions to the progress of electricity are synonymous with the advancement of the motor vehicle industry. Dr. Steinmetz's life was an example of perseverance, steadfastness to an ideal, sacrifice and hard work. His death leaves an unfilled gap in the present industrial fabric of the nation. We bow our heads in tribute to a great scientist.

Sturdy Conditions in Automotive Industry Says M. A. M. A. Report

At the regular meeting of the board of directors of the Motor and Accessory Manufacturers' Association, held October 28, the following statement was authorized and made public by President W. O. Rutherford:

With every indication still pointing to a production of close to 4,000,000 motor vehicles for 1923, the automotive industry continues to show fundamental sturdiness.

Although sales of parts and units during September show a seasonable decline, the figure is more than 35 per cent greater than sales for September, 1922; and last year, it will be recalled, broke all previous production records.

It must also be remembered that the curve of the industry normally calls for a healthful, downward trend in the late autumn months because of seasonal conditions, introduction of new models and other trade factors.

The most significant fact about the automotive industry, at present, is the sanity which tempers the optimism through the trade. Orderliness in growth and genuine conservatism are watchwords, and sound progress is thus assured.

For companies that are strongly organized, adequately financed and established on a firm foundation of quality and integrity, business for the remainder of 1923 and for 1924 gives every promise of being healthy in all branches of the automotive industry.

Reports presented at the Directors' meeting afford an excellent view of the industry as a whole. The cross-section summary, based on these reports, points to particularly encouraging outlook for exports of American motor vehicles and motor equipment. Not only the potential but the actual dollars and cents buying power in the various foreign areas, particularly South America and the Orient, continues to be gratifying.

Service Motors, Inc., Ready for 1924

One of the most enthusiastic sales conferences ever held by Service Motors, Inc., Wabash, Ind., took place at the factory when several hundred distributors, dealers, blockmen and regional sales managers came to the plant to study the details of the product. A novel and original analysis of the practical value of the features of Service Truck design had been worked out by G. L. Gillam, vice-president and director of sales and this was presented to the men, as the strongest point in the attack of the Service organization on the truck buyer. Paul Moore, president of Service Motors discussed the substantial financial condition of the company and its progress during the past year or more in a financial way. There were discussions of sales and advertising plans for the next year, and the crowd went home optimistic and ready for battle.

Plans Progressing for London Ad Convention

The committees to promote attendance at the London advertising convention July 14 to 20, 1924, have been named by Lou Holland, president of the Associated Advertising Clubs of the World.

The chairmen of the department committees with the geographic district chairman of the A. A. C. W. will form a general committee on arrangements under the leadership of Edwin T. Meredith, of Des Moines.

The most important of the committees are:

American Association of Advertising Agencies—Harry Dwight Smith, Chairman, Fuller & Smith, Cleveland; William C. D'Arcy, D'Arcy Advertising Co., St. Louis; William H. Johns, George Batten Co., New York; James O'Shaughnessy, American Association of Advertising Agencies; Henry Ewald, Campbell-Ewald Co., Detroit; Roy Durstine, Barton Durstine & Osborne, New York; William H. Rankin, William H. Rankin Co., New York; William T. Mullally, William T. Mullally, Inc., New York; John Benson, Benson, Gamble & Crowell, Chicago; Frank Seaman, New York.

National Association of Newspaper Advertising Executives, George M. Burbach, chairman, St. Louis Post-Dispatch; Frank T. Carroll, Indianapolis News; Louis Wiley, New York Times; A. G. Newmyer, Item, New Orleans; R. A. Turnquist, Milwaukee Journal; J. H. Brockhagen, Oakland Post Enquirer, Oakland, Cal.; A. J. McFaul, St. Paul Dispatch; A. D. Marks, Washington Post, Washington, D. C.; Rowe Stewart, Philadelphia Record; Frank D. Webb, Webb Adv. Agency, Baltimore; A. L. Shuman, Fort Worth Star-Telegram; H. B. Muir, Free Press, London, Canada; Hal M. Fink, N. Y. World; Harvey R. Young, Columbus Dispatch.

Changes in Selden Truck Personnel

Hal T. Boulden, vice-president of the Selden Truck Corporation, Rochester, N. Y. has announced a change in the personnel of Home Office Sales organization of that company.

Chas. E. Stuart, who has for the past five years been assistant sales and advertising manager, will be succeeded by Glenn W. Poyzer, who will act as sales engineer, doing special work in the sales field. Mr. Poyzer, who has been with the Selden Company for the past twelve years, and who in later years has been the service engineer, began his new duties on October 1st. This is a well earned and well deserved promotion and comes to Mr. Poyzer in appreciation of work well done. Mr. Stuart goes to Chicago to take up a special line of sales work there.

Miss E. V. Storm, who has been with the Selden Company for nearly fifteen to take up a special line of sales work will handle the advertising department.

Stewart-Warner Releases Third-Quarter Financial Statement

The financial report of the Stewart-Warner Speedometer Corp., for the first nine months of 1923 show net earnings to be $6,289,643. After taxes of $741,649 were deducted, net earnings were $5,547,-994. Net earnings after taxes were $1,608,648 for the third quarter. This was 3.04 per cent less than the corresponding quarter of 1922.

General Motors Introduces a New Bearing Bronze

Under the name of Durex, General Motors Corp. has perfected a new porous, oil-absorbing, copper-tin bearing bronze. The new product, the result of long and exhaustive experiment and test, possesses a large number of pores, which will absorb lubricating oils or greases up to 25 per cent of the volume of the bearing according to the manufacturer. Under test it has been found of use in any place in which bearing materials are ordinarily used, and in many cases has even satisfactorily replaced ball and roller bearings.

Thousands of tiny pores, uniformly distributed throughout Durex, give the material the absorptive qualities of a blotter or a wick. Durex not only soaks up oil, but, what is more important still in a bearing, the oil will not drain out again. After a Durex bearing has been soaked in oil it will always thereafter present an oily surface. When the bearing surface has been wiped free of oil, in a very short time a coating of oil re-forms on it. This ability to replenish quickly an oil film on its surface is obviously an outstanding advantage in a bearing, as this characteristic insures the installation against running dry.

There are many places in which Durex can be utilized without provision for additional lubrication and bearings of this type have run as long as 10,000 hr. at 2,000 r. p. m., on ⅞ in. diameter shaft, loaded heavily, lubricated only with the oil contained in the bushing walls.

Users of Durex bearings are cautioned against burnishing the bearing surface or using any method of machining that tends to close the pores of the bearing surface.

Physical properties of Durex bearing metal are as follows:

Brinell hardness	30-40
Scleroscope hardness	15-18
Modulus of elasticity	2,500,000
Weight	3.5 oz. per cu. in.
Specific Gravity	5.40
Oil absorption	25 per cent by volume
Compressive elastic limit	2,000 lbs. to 10,000 lbs. per sq. in. (depending on composition)

Gary Motors Forms Distributing Organization

The distribution of Gary trucks will hereafter be handled by a separate organization, the Gary Motors Distributing Co., which was recently incorporated under the laws of Indiana, for that purpose. The Gary Motors Corp. will now confine itself to the manufacture of trucks.

The Gary Motor Distributing Co., is composed of men, who are closely connected with a number of larger users of trucks, and these connections will greatly aid in the distribution plans. Robert Crowther, former manager of the Gary motor truck plant has returned to take up the manufacturing end under the new plan. Theodore Zumstein, general sales manager will continue in that position with the new distributing corporation.

The general offices of the distributing unit will occupy quarters in the plant of the Gary Motor Corp., at 9th and Taft, Gary, Ind.

General Contractors and Road Builders Plan Joint Meeting

A joint meeting of the Associated General Contractors and the American Road Builders' Association will be held on Thursday, January 17, 1924, in Chicago, to discuss various matters of importance to the membership of both organizations. This joint meeting has been made possible by the proximity in dates of the annual meetings of these organizations in Chicago. The 1924 convention of the American Road Builders' Association will be held Tuesday, January 15th, to Friday, January 18th, inclusive, while the Associated General Contractors meet the following Monday, Tuesday and Wednesday. All the officers, the executive committee and the heads of the twenty-eight chapters of the Associated General Contractors will, however, be in Chicago the previous week. Many of the members of the organization also will be in Chicago that week attending the convention and road show of the American Road Builders' Association. Plans accordingly have been made for the joint meeting. Details of the program will be announced shortly.

Special Train to Chicago for Boosters Club No. 1

Members of the Boosters Club, N. E. No. 1, to attend the A. E. A. show, Nov. 12-17, will travel to Chicago the Sunday preceding the show in a special train to be termed the Booster Special. This was arranged at the monthly meeting held at Boston on Oct. 15 which event was well attended and at which one new member was elected.

At Chicago representatives of the various Booster clubs will meet and take action upon a National organization as there are sufficient clubs to warrant such an association and it is believed that the step is a timely one.

At the Boston meeting the greater part of the evening was given over to a discussion of plans for the winter and as a result a number of committees are to be appointed by the President. These committees are to formulate plans whereby the Boosters can increase their value and co-operation with the industry. It was decided that all meetings for some time to come will be held in Boston and until such time as the plans have been worked out when it is probable that meetings will be held in the various cities and some real constructive work done for the jobbers and others in the industry. The next meeting will be held in Boston on Monday, Nov. 26.

For the fiscal year ending July 31, the Ford Motor Co., of Canada shows profits of $5,106,197.85 which is an increase of two per cent over the profits of the preceding year. Production, which was 60 per cent better than the previous period, was divided as follows: 70,328 cars and trucks and 3395 tractors.

Standard Oil of Indiana to Distribute Ethyl Gas

In his address before the Society of Automotive Engineers in Chicago, October 12th, C. F. Kettering, president of the General Motors Chemical Company, announced that a contract had been entered into between that company and the Standard Oil Company of Indiana for the distribution of Ethyl Gas.

Ethyl Gas is the new fuel developed by General Motors Research Corporation. It has the effect of taking the knock out of a motor, no matter under what conditions or load an automobile is driven. It is the result of several years research and test at the laboratories of the General Motors Research Corporation in Dayton and has met with enthusiastic reception from motorists in Dayton and in Cincinnati, Ohio, where it has been placed on sale at a few stations.

Distribution by the Standard Oil Company of Indiana will cover the States of Indiana, Michigan, Illinois, Minnesota, Wisconsin, Iowa, Missouri, Kansas, Oklahoma, South Dakota and North Dakota as quickly as installation can be made. This installation will be started in Indiana and carried through Illinois, into Missouri and Kansas. The southern part of the distributing territory is being equipped this winter and the northern part will be equipped as early as possible in the spring. First installations will be made in Standard Oil Company of Indiana service stations. It is believed that all stations will be open and ready to supply Ethyl Gas by July 1, 1924.

There are 968 towns and cities in the eleven states mentioned, where one or more service station is operated. Bulk distributing facilities exist in 4,088 towns. The service stations now being operated by Standard Oil Company of Indiana total 1,851 and these cover thoroughly the more important cities.

Oppose Direct From Factory to Users Methods

Directors of Motor Truck Industries, Inc., at a recent meeting went on record in opposition to merchandising motor trucks direct from the factory to users, and adopted a resolution condemning such practices as harmful to purchasers of motor trucks, as unfair to existing dealer organizations, and destructive to the industry as a whole.

Don F. Whittaker, secretary and general manager of the Association declares that the past history of the industry has shown such "direct from factory to user plans" the last resort of manufacturers intending liquidation, in practically every instance. "Furthermore," he said, "if such manufacturers do continue in business for any length of time, their interest in the purchaser of a truck usually ceases at the time the sale is made. The plan having been resorted to after failure to otherwise dispose of materials, it is quite frequently the case that materials find their way into the chassis which are either obsolete or in poor condition because of the time they have been on hand. This condition cannot help but result in dissatisfaction on the part of the purchaser.

"In every instance we know of, manufacturers who have resorted to this merchandising idea have been unsuccessful and are no longer in business. This policy and plan is quite in keeping with the policies which usually preceded it and which resulted in the factory's inability to attract dealers or keep them after dealer relations had been established.

"We have yet to learn of one case where the 'direct from factory to user' idea has worked out satisfactorily. Every successful company in the business today has built its success on the provision of localized sales and service. Representation is either through dealers, through factory branches, or a combination of both, providing a more or less constant output, assuring up-to-date units and providing the kind of service which plays a large part in the satisfactory operation of the vehicle.

"The dealer or factory branch is a vitally essential part of the motor truck industry."

Northway Motors to Merge With Amalgamated Motors Corporation

Stockholders of the Northway Motors Corp., Natick, Mass., according to Proctor W. Hansl, unanimously approved the plans for a consolidation of that company with the Bessemer Motor Truck Co., and the American Motors Corp., the two later companies merging earlier in the year. Recently the same interests acquired the assets of the Winther Motor Co. of Kenasha, Wis. and this property will also be taken over as a part of the consolidation.

This development indicates a change in the plans for the reorganization of the Northway properties recently worked out by John M. Mack but it is understood that Mr. Mack will be prominently identified with the management of the new company which will take over the control and operation of all the properties. This company is to be known as the Amalgamated Motors Corporation and was organized a short time ago for this purpose with an initial capitalization of $1,000,000 of 8 per cent Participating Preferred Stock and 250,000 shares of Common Stock.

The details of the plan of factory operation have been worked out with the co-operation of C. W. Blackman who will be identified with the new company and other well informed men in the automotive industry.

The Amalgamated Motors Corp. headed by Proctor W. Hansl, who is generally credited with having brought about the merger and all interests identified with the various properties will be presented in the management. The Company's financial affairs will be in the hands of Robert Bursner, treasurer of the Bessemer American Motors Corp., and Irad M. Lewis, formerly president of the Bessemer Motor Truck Co., and Ralph D. Mock, formerly vice-president of the Hydraulic Pressed Steel Co., will have a prominent place in the management. Headquarters will be located in Plainfield, N. J.

Electric Trucks and Parts Exhibits at Electrical Show

The Sixteenth Annual Electrical and Industrial Exposition, which was held last month in the Grand Central Palace, was like its predecessors, a highly interesting and instructive event, attracting large crowds daily. Household appliances of all descriptions operated by electricity dominated the exhibits.

The automotive industry was represented by approximately fifteen exhibits representing electric vehicle manufacturers and storage battery concerns. One day was designated as electric truck day, on which special effort was centered to demonstrate the economy and reliability of electric trucks for city and suburban delivery work. Many specially designed hoists and tractors were exhibited. The Steinmetz Electric Truck Company exhibited a one-ton delivery wagon, with specially designed body. The Commercial Truck Company exhibited a two-ton chassis and a one-ton panel body delivery truck; the Walker Electric Vehicle Company showed a chassis and a three-quarter-ton truck of the type used by the Franklin Simon Company of New York City; the Walter Electric Truck Company exhibited a one-ton job with delivery body; the Autocar Company showed a delivery wagon and chassis and the O. B. Electric Company exhibited heavy trucks.

Among the tractors, trailers, and hoists exhibited were those of the Baker R and L Electric Company and the Yale and Towne Manufacturing Company. The latter showed their own make of standard drive electric hoist units, interchangeable chains for overhead use and those adapted to late types of tractors. The Baker R and L Company's "Hy-Lift" and three wheel tractors combine all of the latest developments in this type of electric vehicle.

Storage batteries and exhibits of sections and parts of batteries were displayed in the booths occupied by the Edison Storage Battery Company; Sarvas Electric Company, New York distributors for the Westinghouse Electric Company; Electric Storage Battery Company of Philadelphia and the Philadelphia Storage Battery Company.

The Automobile Bureau of The New York Edison Company has its electrically illustrated and operated "Dollar Race Board," showing the distance a dollar will carry a horse, gasoline or electric truck.

New York No. 5 Elects New Treasurer

The Boosters Club, New York No. 5, held a very successful meeting at Syracuse on Oct. 15 there being a very good attendance. E. Luman Mills, Klaxon Company, was elected to fill the position of treasurer which was vacant. The club voted to adopt the small Gothic letter B for its emblem as the size appealed and it is a type that can be universally used by the various clubs. A large number of the members will attend the A. E. A. show at Chicago.

Personals

L. M. Baker, former wholesale sales supervisor of the Hyatt Roller Bearing Co., was recently appointed Detroit representative of the Bassick Manufacturing Co. of Chicago, manufacturers of the Alemite High Pressure Lubricating System. Mr. Baker makes his headquarters at the Alemite Lubricator Co. of Michigan, 4750 Woodward Ave., Detroit.

John F. Bieber has been elected president of the Erie Automobile Dealers' Association. **John Roth** has been made vice-president.

J. Budd Bleiler, whose tire experience dates back to 1908, has been appointed general sales manager of the Howe Tire & Rubber Co., New Brunswick, N. J. **R. T. Christy** has been made advertising manager with headquarters in New Brunswick. Until recently the sales and service departments have been maintained in Cleveland.

Willis S. Brown, Sr., secretary and general manager of the Belvidere Screw & Machine Co., Belvidere, Ill., died Saturday, October 6.

W. J. Bryan announces his association with the Heintz Manufacturing Co., of Philadelphia. His headquarters will be in the General Motors Bldg., Detroit.

L. N. Burns, president of the O. E. Szekely Co., Inc., of Moline, Ill., mechanical and automotive engineers, was elected president of the Moline Chamber of Commerce. Mr. Burns, before coming to Moline in April, was in the implement business in an executive capacity.

Howard J. Cliff, formerly of the Hart-Parr Co., Charles City, Iowa, has joined the Allis-Chalmers Mfg. Co., Milwaukee, as manager of the service department of the tractor division.

Charles Ethan Davis has resigned as general manager of the Eisemann Magneto Corp., of Brooklyn, N. Y. He will be succeeded by **John H. Allen.** Mr. Davis was, at one time, general manager of the Alco plant at Providence as well as the Simplex plant at New Brunswick.

William R. Dorney has been made representative for the territory east of Pittsburgh along with the Southern Atlantic Coast, for the Corcoran Mfg. Co., of Cincinnati, O., succeeding Joseph P. McCarthy, resigned.

C. G. Embleton has been made branch manager of the Chicago branch of the American-LaFrance Fire Engine Co., Inc. He was, for five years, general manager of the Packard Motor Car Co. of Chicago.

J. E. Harron, vice-president of the Henderson Tire Co., who will have charge of the company's newest Detroit station in the G. A. R. Bldg., Cass and Grand River Aves.

R. B. Johns, formerly branch manager for the Republic Truck Corp. in Pittsburgh, has been made division sales manager for the Selden Truck Corp., in the Pittsburgh territory.

A. C. Lindholm has been appointed Pacific Coast representative of the Van Norman Machine Tool Co. of Springfield, Mass. He was at one time, general manager of the Franklin Machine & Tool Co., which recently merged with the Van Norman Machine Tool Co.

R. T. Mathewson has resigned as district manager of the SKF Industries, Inc., to devote his entire time to the development of the products of the Nichols & Wright Motor Co., of Buffalo. He is succeeded by **Robert Hirsch** who has been transferred from the Philadelphia office.

Charles McDowell, who for five years was in charge of sales for the W. H. Baker Motor Sales Co., of Boston, Selden truck distributors, leaving the Baker organization a year ago to become associated with the Noyes-Buick Co., G. M. C. truck distributors in Boston, has returned to Selden, having been appointed New England division sales manager for the Selden Truck Corp., succeeding James E. Morse, resigned.

Jack Mehan, for several years manager of the Brunner Mfg. Co., air compressors, Utica, N. Y., has been appointed manager of the Research Club, Chicago.

R. A. Olsen has been appointed sales manager of the Tuthill Spring Co., of Chicago, succeeding H. C. Wright who has entered another field. Mr. Olsen will continue to be in charge of advertising.

Wallace E. Propst has been advanced to the post of assistant sales manager of the Miller Rubber Co., Akron, O. He was formerly manager of the B. F. Goodrich branch at Burlington, Ia., and later Milwaukee branch manager for Miller.

Harry E. Rotert, for the past four years representing the sales engineering division of the Timken Detroit Axle Co., announces his association with the Damascus Manufacturing Co. of Cleveland, Ohio, with headquarters in the Marquette Bldg., Chicago.

John F. Sowers, formerly with the Long-Costello, Inc., Chicago, is now vice-president of the Charles H. Touzalin Agency, also of Chicago.

Harry S. Sternberg, for the past four years with the Signal Motor Truck Co., in charge of engineering, production, purchasing and service and formerly with the Packard and Studebaker companies has joined the Blakely Mfg., Co., Detroit as sales distribution manager.

Alfred H. Swayne, vice-president, General Motors Corp. in addition to his other duties, has been appointed director of the Traffic Section of the Advisory Staff in charge of the Association of Traffic Representatives of the various operating divisions of General Motors.

L. Wechsler has taken entire charge of the New York office of the Canton Foundry & Machine Co., of Canton, O., manufacturer of alligator shears, portable floor cranes, turntables. He succeeds Mr. Bergere who is now in charge of the New England division at 261 Broadway, N. Y.

Richard W. Yerkes, formerly general manager of the Link-Belt Company's Philadelphia plant, has been appointed treasurer for the Link-Belt Co., succeeding **B. A. Gayman.** He will be located at the general offices in Chicago. Mr. Gayman heads the Meese & Gottfried Co., of San Francisco, newly acquired by Link-Belt.

Removals and Trade Changes

The E. G. Manufacturing Co., Inc., selling agent for twelve automotive accessory manufacturers, has moved into commodious quarters at Room 1409, Fisk Bldg., 250 West 57th St., New York City. Emil Grossman is president of the company.

The Blacker Engineering Co., Inc., Grand Central Terminal, New York City, manufacturer of Blacker blacksmithing hammers, has opened an office in Pittsburgh at 421 Wood St., with George Hesse as district manager.

The Martin Truck Co., sales and service station for the Stewart motor truck at Indianapolis is now at its new location, 921 N. Capitol Ave. The firm was formerly at 535 N. Capitol Ave.

The Trexler Company of America announces that its sales and general office is now located at the factory, Church and F Sts., Wilmington, Del.

Canavan Motors Corp., has been appointed distributors for the Diamond T truck on the Pacific Coast. Sales and service stations have been established at San Francisco and Portland. The new distributor is headed by J. Jerome Canavan.

The Columbus Varnish Co., of Columbus, O., has let contracts for large additions to its plant which will greatly increase its

R. G. Cadden

Manager of the newly opened Philadelphia branch of the American-LaFrance Fire Engine Co., Inc. Mr. Cadden has been connected with truck sales since 1905, having been truck sales manager of the Philadelphia Packard branch.

David McCosker

Who has been announced as assistant to the president for the Moon Motor Car Co., of St. Louis, Mo. Mr. McCosker has been identified with the automobile industry for many years, having specialized in sales and merchandising work.

Frank L. Parrill

The Prest-O-Lite Company, Inc., of Indianapolis, Ind., announces Mr. Parrill as sales promotion manager. He will have charge of all advertising as well as sale promotion for both storage batteries and small gas tanks.

A. J. Roemer

Recently appointed assistant sales manager of the Multibestos Company of Walpole, Mass. He has been with Multibestos for eight years covering various eastern territories. His promotion is a recognition of his splendid sales record.

Frank H. Dewey

For the past two years, sales manager of the Wood Hydraulic Hoist & Body Co., Detroit, Mich., has been made assistant general manager of that company. He is widely known through his work with the Horizontal Hydraulic Hoist Co., Milwaukee, Wis.

manufacturing facilities. The company is soon to pass its 30th year of manufacturing existence.

The Whitaker Battery Supply Co., is at a new location 2457 Charlotte St., Kansas City, Mo. The quarters afford ten times the original floor space.

The Ford Motor Co. has purchased the Johannson Gauge Co., with home offices in Sweden and an American plant in Poughkeepsie, N. Y. The company manufactures precision instruments that measure down to 1/1,000,000 of an inch.

The C. Spiro Manufacturing Co., of New York, has purchased a factory building containing 25,000 sq. ft., at Dobbs Ferry, N. Y., and have begun to move into the new quarters. The company expects to be completely moved by January 1st.

The J. H. Williams & Co., is offering its Brooklyn plants comprising 150,000 sq. ft. for sale as the company has arranged to merge its Brooklyn plant with its large plant at Buffalo.

The Williams Bros. Aircraft Corp., San Francisco, Cal., manufacturers of Williams accelerators, having outgrown their present quarters, have moved to a new home at 25th and Potrero Ave, recently constructed for that purpose. The plant is roomy, light and modern in every detail.

Trade Literature

The Brown-Lipe Gear Co., Syracuse, N. Y., has issued a new bulletin on Brown-Lipe gear transmission adjustments for taper roller bearings. Free on request.

Where Your Springs Are Made, is an attractive little booklet issued by the Saving Spring Co., Ashland, Mass. Departing from the conventional, the booklet gives views of the various offices of the company, several of the buildings and factory interiors, along with a running comment on the various pictures.

Putting Electricity to Work to Reduce Delivery Costs, an interesting monograph on electric truck transportation which is one of a series of permanent reference books being published by the Society for Electrical Development, Inc., 522 Fifth Ave., New York City.

Laminated Shim Co., Inc., of Long Island City, N. Y., manufacturers of Laminated Shims, has issued a complete price-list and replacement list covering all Laminated Shims. Manufacturers, jobbers, dealers and servicemen will find this list of inestimable value in determining shim sizes. Prices, etc., for all makes of cars, trucks and tractors.

The National Foreign Trade Council, India House, Hanover Sq., New York City, has published a noteworthy brochure entitled "Our Imports and Who Uses Them."

B. C. Ames Co., Waltham, Mass., has issued a new catalog containing illustrations and descriptive matter of the Ames micrometer dial gages. Free on request.

Armstrong Goes to Dunlop Tire & Rubber Company

Howard B. Armstrong, formerly manager of O'Brien & Hoover, Inc., Philadelphia, Pa., who has had 16 years' experience in the truck tire business has been appointed to supervise truck tire sales for the Dunlop Tire & Rubber Co. of Buffalo, N. Y. This announcement was made by E. H. Kidder, general sales manager for the Dunlop company.

In nearly a score of years that Mr. Armstrong has been in the truck tire game he has made many friends, particularly in Philadelphia where as chairman of the entertainment committee of the Motor Truck Association of that city he earned the title "Army."

S. A. E. Holds Annual Production Meeting at Cleveland

An exceptionally large attendance featured the annual production meeting of the Society of Automotive Engineers held at the Hotel Winton, Cleveland, Ohio, October 25 to 26. Four sessions comprised the meetings: Machine Tool; Factory Managers; Scientific Management and General.

Visits to the American Steel & Wire Co.; the Chandler Motor Car Co., and the National Malleable Castings Co., were made Friday afternoon. The Production dinner was held the evening of the second day.

Howard P. Woodworth

Howard P. Woodworth, general manager of the Union Motor Truck Co., Bay City Mich., and well known throughout the trade, died October 17 as the result of an automobile accident, in which his leg was badly injured.

Mr. Woodworth was connected in a sales and engineering capacity with the Republic Motor Truck Co., in its early days and later left to form the Union Motor Truck Co.

Crude Rubber House Changes Its Name

White & Company, 602 Flatiron Bldg., Akron, Ohio, after two years in business at that address, handling crude rubber and raw materials, announce an expansion by which the firm name is changed to White-Seiberling & Co.

This change results from the purchase by C. W. Seiberling, Jr. of a partnership in this concern, originally organized by C. M. White, Jr., who, prior to that was sales manager of the Firestone Steel Products Company, Akron, Ohio.

Highway Engineering Course at University of Michigan

A. H. Blanchard, professor of Highway Engineering and Highway Transport of the University of Michigan, Ann Arbor, announces the schedule of the 1923-1924 Graduate Short Period Courses in Highway Engineering and Highway Transport to be offered by the University during the winter period, December 1923 to March 1924.

The attendance of these courses has steadily increased during the past four years from 29 in 1919-1920 to 110 in 1922-1923. The average age of the men in attendance last winter was 27 years, varying from 23 to 56 years. The students have been drawn from the U. S. Bureau of Public Roads, state, county and municipal departments, consulting engineers offices, contractors' organizations, university faculties, companies manufacturing motor trucks, highway machinery and materials and the field of highway transport.

Union Trust Buys Sharon Pressed Steel

Purchase of the Sharon Pressed Steel Co., plant at Cleveland by the Union Trust Co., also of Cleveland has been announced. The transaction, the purchase price of which has not been disclosed, took place at a receiver's sale. The Trust Co., acted for bondholders, for whom it held a mortgage of $500,000, which it foreclosed recently.

Selden to Have Large Branch in New York City

Plans have just been completed for the establishing of a new and larger sales and service station in the Greater New York territory by the Selden Sales and Service Co., of New York, distributor for the Selden Truck Corp., of Rochester. The announcement has just come through Hal T. Boulden, vice-president of the Selden Corp., and president of the Selden Sales and Service Co., of New York.

The Sales Company having outgrown its plant at 19th St., New York, is now to have a home at the end of the Queensborough Bridge in Long Island City. The building should be ready by December 15th.

Japan Places Order for 1000 Commercial Bodies

Frederick M. Small, president of the Martin-Parry Corp., of York, Pa., has announced the receipt of orders by his company for 1000 commercial bodies to be shipped with Ford chassis direct to Japan within the next 30 days.

This is one of the largest orders for commercial bodies ever placed, and it is understood that it is part of the program fostered by Japanese authorities for the rapid reconstruction of the Japanese cities destroyed by the earthquake.

G. M. C. Branch Service Managers in Convention

Branch house service managers of the General Motors Co. from all parts of the United States and Canada met in a three day convention recently at the company's plant in Pontiac. S. V. Norton, chief of the service department, presided.

The object of the meeting was to demonstrate to the mechanics in the field how the General Motors trucks are built and at the same time to discuss and thresh out truck problems. A round table discussion, preceded by a luncheon, was a feature of the meeting. The service men also made a trip to Detroit where they inspected the motor plant.

How Certain Salesmen Proceed

By J. B. DILLON

OBSERVING that some retailers had new motor trucks, and recalling that each had informed me several times that they would not consider getting rid of their horse and wagon equipment for a motorized vehicle, I sought out the dealer who sold one of the retailers, a fruit peddler, a truck and asked if he would tell me how he "turned the trick."

"There was no trick to it!"

"Oh yes there was. That man told me that he positively would not consider the expense of a motor truck, that his horse and wagon were ample."

"He told me the same thing on different occasions."

"Well how did you make the sale, that's the turning of the trick?"

"I called his attention to the fact that the fruit season was on the wane, and asked him what he proposed to do during the winter months. He was undecided. I then asked him if he had considered the cost for feeding, perhaps, an idle horse all winter?"

"Oh he wont be idle all the time!"

"A greater part, wont he?"

"Possibly so."

"I then explained to him that to use the horse for any heavy hauling, or even to use him during icy weather it would be necessary to have the animal rough shod. Even then you would not expect the animal to pull a very heavy load. Even with a light load, your travel would be slow and were you to engage in a general transfer business you could not expect to make much money."

"What do you mean by general transfer?"

Increases the Owner's Serviceability

"I called his attention to the fact that coal companies used extra trucks, etc., during the heavy demand for coal and that if he was willing to work, he could get part of that trade. Many commercial houses frequently have occasion to employ extra trucks to take care of surplus haulage, which business he could get if he had one of our trucks. Summarily I explained that the money he would make during the winter would go a long ways towards paying for the truck. In fact that possibly he might find it advantageous to quit the fruit peddling and continue as a transfer man."

"Oh I like the winter idea, but I will go back to the fruit business in the summer!"

"All right. Have you thought of how much more ground you could cover with a motor truck than with your horse, and have you thought of the bigger variety of goods you could carry. With a bigger variety and covering more ground, you will naturally obtain more summer customers, all of which means a bigger and better business, something that no man can do with a horse and wagon."

"No, I never gave that part of it any thought, but see here those trucks cost more than I can plank down."

"You do not have to pay cash, and as for the first payment, why not sell the horse and wagon?"

"I got enough for a reasonable payment, and as soon as I can sell the horse and wagon, I'll buy."

"Shall I help you to get a buyer?"

"Not unless the fellow that's been dickering for my outfit has changed his mind."

"Well, from this point on our retailer was sold. He was back the same afternoon and the deal was closed. I had one of the boys instruct him for a few days. He took to the truck like a duck does to water and admitted that he was a darn fool or he would have made the swap a year previous."

What this salesman told the peddler is an absolute truth. Have you ever tried to contrast "what is," by "what may be," with the change of equipment? Try it, people like to know why they are spending their money, and many of them cannot see the "fine points" as expounded by this salesman.

Winning the Groceryman

A retail grocer, doing a nice business, much of which was ordered over phone, using a horse and wagon delivery, stated at various times that there would be no advantage to him to discard the horse and wagon for a motorized vehicle.

Imagine my surprise when I saw a spick and span high priced speed truck, bearing this groceryman's name, coming down the street. I hurried to the store and said:

"Hello, Joe; I see you have changed your mind about the horse and wagon."

"Did you see her, aint she a beauty?"

"You bet I did and it's some advertisement, too."

At this juncture the delivery wagon arrived, the young driver came in and proceeded to wrap some bundles, but I wanted to know what caused the change of sentiment:

"How did it happen that you made the change?"

"If you had listened to that salesman you would have bought one, too."

"What did he say?"

"You see that boy over there wrapping bundles, weighing the orders and answering the telephone?"

"Yes."

"You never saw that before. He was always out with the wagon, now he makes the deliveries, helps in the store and has idle time."

"Business fall off any?"

"Lord no, we are doing more business because the folks are tickled with our promptness."

"But you haven't told me what the salesman told you?"

"Oh yes, he told me that I could find time to attend to outside business without worrying about the store and that I could close earlier and do a bigger and better business, if I had one of his delivery trucks. I told him that I didn't believe it and he sent one of those wagons with his driver for a few days' experiment. The driver showed the boy how to run the thing and it all came out just as the car salesman said it would. You see he called the turn and I called for a new wagon, and now I realize what a stupid fool I've been, working myself to death when there was no need to do so."

If You Don't, Some One Does

Are you watching such prospective customers? If not, it will pay to do so. It is a well-known fact that insurance salesmen use some local happenings as theme to advertise the benefit of insurance, and in soliciting while a certain accident is still fresh in the minds of the prospect. A person is more likely to act with favor when a definite and established incident is linked up with the sales talk. The salesman not only provides proof but rings in the personal factor as well, tying up in a very forceful and convincing manner the logic of his reasoning. That is why real salesmen use that as the "psychological moment" for the business.

What applies to insurance, applies to any of the other needs of life, and by "needs," it must be understood as covering any and all things that lessen the burden of man and beast, and surely there is nothing that fulfills such functions any more than does the motorized vehicle, be it an automobile, speed wagon, truck or tractor.

Oakland Establishes Motor Coach Line

Claiming that the transportation system provided by the local traction company is inadequate to meet the needs of the community, which has nearly doubled in population in the past ten years, the City of Oakland has established a municipal motor coach line.

Large areas in the newer parts of the city are at present many blocks from the nearest car lines, and service on some of the main lines is claimed to be inadequate and unnecessarily slow.

The first coach for the Oakland Municipal Safety Coach Line was delivered by the Faegol Motors Co., October 22nd.

Motor buses made in the U. S. A. are serving the Collegio Progresso Brazilerio, Sao Paulo, Brazil. This is a Baptist Mission School and the buses are used for transportation of students and general trucking.

Water Cooling Capacities of Current Truck Models

(Capacities Given in Quarts)

This Table Will be Found of Value in Determining the Amount of Anti-Freeze Solution Necessary for Cooling Systems for Winter Operation

Name	½	¾	1	1¼	1½	2	2½	3	3½	4	4½	5	6¼	7
Acme			17		17	14.29		17.88			21		26.78	
American-LaFrance						28			50			48		
American							32			40		40		
Armleder					22		26		31					
Atterbury					20		24		32			42		
Autocar						18		28				30		
Available				21	21	21	21		30			51		
Bethlehem			22			36		36						
Bets			20			22	26							
Brinton					16		24							
Brockway			18		28		30		32			45		
Buffalo						20		24						
Case						24								
Chevrolet	8	8												
Commerce			19	22			24							
Corbitt		24	24		24	24	24	24	24			26		
Day-Elder			18		19	23	24		33			37		
Diamond T			24		24		24		34			34 and 38½		
Dixon					24		28		32					
Dodge		11												
Dorris			12			20			20					
Double Drive										38				
Duplex			15		20	20	20	20	32					
Eagle			24		24	24		24						
Federal		18			18	20	20		28	28		32		
Front Drive					27									
Garford			8		12		16			18		18		18
G. M. C.			20.5			30			40			40		
Graham			11		11									
Gramm-Pioneer				19	24.5	24.5	24.5	38	38	38		42		
Gray			13											
Harvey						46	46		56					
Hug					15									
Indiana			17		22	24			24.5			37		
International			22–17		17	17		30				30		
Kalamazoo					28		30		34					
Kearns			16		20	30								
Kelly-Springfield					24		24		52			52		
Keystone						20								
Kissel			30		30		30			30				
Lange							38		44					
Larrabee				20	20 and 24		36		36	60		60		
Mack					25	25	25		62			62		62
Maxwell					20									
Nash					22		22							
Nash Quad							40							
Oldsmobile			19											
Olympic							33							
Overland	12													
Parker			19		22	26	28		28			44		
Patriot			22			30		37						
Perfection		22		22		40		40			56	56		
Pierce-Arrow						38	38	38	50	50	50	50		50
Pioneer			26											
Pittsburgher							44	44	44					
Power					22		28		32					
Reo				14										
Republic				18		22		28 and 30		30				
Ruggles		16		22		22	22							
Rumely					24									
Schacht			24		24	28.5		28.5		29.5		29.5		29.5
Service				16	24	33		33		48			48	
Signal			18		18		19		24			32		
Standard			17		17		27		30			38		
Sterling					30	30	30		42			42		42
Stewart			22	20	20	20	26	26	28	28				
Transport			22.5		24	25		23.5	26			43		
Twin City						26			39					
Union							18			18	18	18		
United			18		25	25	25		36					
U. S.				20	22	22		32		40		40		60
Velie						24								
White		24				24			30			30		
Wilson			29		29		26		34			34		
Witt-Will					24	24	32	32				40		
Yellow Cab		17.5	17.5	17.5										

How to Use This Table

Addition of denatured alcohol to the water of the cooling system is the most commonly employed method of preparing anti-freeze solutions. The amount of alcohol to be added to the cooling system, of course, depends upon the temperature conditions under which the truck is to be operated. The proportion of alcohol varies in direct ratio with temperature conditions. If protection against freezing is desired in regions where the temperature will not drop below zero, Fahrenheit, but thirty per cent of the volume need be alcohol. For example, a cooling system having a total capacity of 20 quarts will consist of 14 quarts of water and 6 quarts of alcohol. Thirty per cent of 20 is 6. This 6 represents the alcohol content.

For operation in temperature of 30 degrees above zero, but 2 per cent of the volume need be alcohol; 20 degrees, 13 per cent; 10 degrees, 22½ per cent; zero, 30 per cent; 10 degrees below zero, 37 per cent; 20 degrees below, 43 per cent; 30 degrees below, 48½ per cent; and 40 degrees below, 56 per cent.

Replacement Table—Corrected Monthly

Including Piston Ring Sizes, Carburetor Sizes, Hose Sizes, Fan Belt Sizes, Brake Lining Sizes and Truck Frame Dimensions

Note: Under Carburetor Inlet Diameter Will be Found Either the Size of Main Air Intake or the Gasoline Fuel Line

Fan Belt Type: V—V-Shape, F—Flat, R—Round

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Acme 20–1	3	1/4	1	1	H	11	2	11	2	38 3/4	3/4	V	11 1/2	2 1/2	1/4	2	11 1/2	2 1/2	1/4	2	110 3/8	63 3/8	194	34	11
Acme 30–1 1/2	3	1/4	1	1	V	11	2	11	2	38 3/4	3/4	V	12	3	1/4	2	12	3	1/4	2	110 3/8	63 3/8	194	34	10 1/2
Acme 40–2	4	1/4	1	1	V	8	1 1/2	11	1 1/2	40	1 1/2	F	12	3 1/4	1/4	2	12	3 1/4	1/4	2	123 3/8	74 3/8	208	34	9 1/2
Acme 40L–2	4	1/4	1 1/4	1 1/4	V	11 1/2	1 1/2	12 1/2	1 1/2	39 1/2	1 1/2	F	12	3 1/4	1/4	2	12	3 1/4	1/4	2	123 3/8	74 3/8	214 1/2	34	9 3/4
Acme 60–2 1/2	4	1/4	1 1/4	1 1/4	V	11 1/2	1 1/2	12 1/2	1 1/2	39 1/2	1 1/2	F	13	3 1/2	1/4	2	13	3 1/2	1/4	2	132 3/8	79 3/8	223 1/2	34	10
Acme 60L–3	4	1/4	1 1/4	1 1/4	V	11 1/2	1 1/2	12 1/2	1 1/2	41 3/4	1 1/2	F	13	3 1/2	1/4	2	13	3 1/2	1/4	2	140 11/16	79 3/8	235 1/2	34	10
Acme K (Bus)	3	1/8	1 1/2	1 7/8	V	12 3/4	1 1/16	12 3/4	1 1/16	34 1/2	1 1/4	F	15 1/2	3 3/4	1/4	2	15 1/2	3 3/4	1/4	2	220 1/8	127 5/8	312	41 3/16	6
Acme 90–3 1/2	4	1/4	1 1/4	1 1/4	V	10	1 1/2	12	1 1/2	41 3/4	1 1/2	F	15 1/2	3 3/4	1/4	2	15 1/2	3 3/4	1/4	2	150 1/4	95 1/4	243	36	10 1/4
Acme 90L–4	4	1/4	1 1/2	1 1/2	V	10	1 1/2	10	1 1/2	40 1/2	1 3/4	F	15 1/2	3 3/4	1/4	2	15 1/2	3 3/4	1/4	2	153 3/4	96 3/4	255	37	10 1/4
Acme 125–5	4	1/4	1 1/2	1 1/2	V	10	1 1/2	10	1 1/2	40 1/2	1 3/4	F	18	4	1/4	2	18	4	1/4	2	159 3/4	99 3/4	261	37	10
American-LaFrance 1R- 3/4	3	1/4	1 1/8	1 5/8	V	9	1 1/2	9	1 1/2	45	1 1/2	F	29	4	1/4	1	46 1/2	2 3/4	1/4	4	108	60	207 1/8	33	10
American-LaFrance 2R-2	3	1/4	1 1/8	1 5/8	V	11 1/2	1 1/2	9	1 1/2	42	2	F	†	†	1/4	4	17	3 1/2	1/4	4	132	81	231 1/8	33	10
American-LaFrance 2R-2	3	1/4	1 1/8	1 5/8	V	11 1/2	1 1/2	9	1 1/2	42	2	F	†	†	1/4	4	17	3 1/2	1/4	4	156	98	252	33	10
American-LaFrance 3R-3 1/2	3	1/4	1 1/8	1 5/8	V	11 1/2	1 1/2	9	1 1/2	42	2	F	11 3/4	8	1/4	2	21	4	1/4	4	144	90	243 7/8	35 11/16	9
American-LaFrance 3R-3 1/2	3	1/4	1 1/8	1 5/8	V	11 1/2	1 1/2	9	1 1/2	42	2	F	11 3/4	8	1/4	2	21	4	1/4	4	168	104	267 1/8	35 11/16	9
American-LaFrance 3R-3 1/2	3	1/4	1 1/8	1 5/8	V	11 1/2	1 1/2	9	1 1/2	42	2	F	11 3/4	8	1/4	2	21	4	1/4	4	192	114	291 1/8	35 11/16	9
American-LaFrance 5R-5	3	1/4	1 11/16	1 11/16	V	11 1/2	1 1/2	9	1 1/2	42	2	F	11 3/4	8	1/4	2	21	4	1/4	4	144	90	243 1/8	36	10
American-LaFrance 5R-5	3	1/4	1 11/16	1 11/16	V	11 1/2	1 1/2	9	1 1/2	42	2	F	11 3/4	8	1/4	2	21	4	1/4	4	168	104	267 1/8	36	10
American-LaFrance 5R-5	3	1/4	1 11/16	1 11/16	V	11 1/2	1 1/2	9	1 1/2	42	2	F	11 3/4	8	1/4	2	21	4	1/4	4	192	114	291 1/8	36	10
Armleder 21–1 1/2	4	1/4	1	...	V	12	1 3/4	16 1/2	1 1/4	31 1/2	2	F	11 1/16	3 1/4	1/4	4	11 5/16	3 1/4	1/4	4	Opt	67 3/4	Opt	32	9 1/4
Armleder 40B–1 1/2	4	1/4	1 1/4	...	V	9 1/2	2	11 1/2	1 1/4	33 1/4	2	F	11 1/16	3 1/2	1/4	4	11 5/16	3 1/2	1/4	4	Opt	74 1/8	Opt	32	9 1/4
Armleder 40C–1 1/2	3	1/4	1 1/4	...	V	8 1/2	1 1/4	11 1/2	1 1/4	34	1 1/4	F	11 1/16	3 1/2	1/4	4	11 5/16	3 1/2	1/4	4	Opt	74 1/8	Opt	32	9 1/4
Armleder KWB–3 1/2	4	1/4	1 1/4	...	V	12	2	16 1/2	1 1/4	35 3/4	2	F	37	3	1/4	1	16	3 3/4	1/4	8	Opt	89 11/16	Opt	36	8 11/16
Armleder KWC–3 1/2	3	1/4	1 1/4	...	V	10	1 1/2	16 1/2	1 1/4	35 3/4	2	F	37	3	1/4	1	16	3 3/4	1/4	8	Opt	89 11/16	Opt	36	8 11/16
Armleder HWB–2 1/2	4	1/4	1 1/4	...	V	9 1/2	2	11 1/2	1 1/4	33 1/4	2	F	15 1/16	3 1/2	1/4	4	15 1/16	3 1/2	1/4	4	Opt	74 1/8	Opt	32	10
Armleder HWC–2 1/2	3	1/4	1 1/4	...	V	8 1/2	1 1/4	11 1/2	1 1/4	34	1 1/4	F	15 1/16	3 1/2	1/4	4	15 1/16	3 1/2	1/4	4	Opt	74 1/8	Opt	32	10
Atlas 22–1	4	1/8	1	...	V	12	...	11	1 1/4	33 1/2	1 1/2	F	42 7/8	2 1/4	1/8	2	22 1/2	2 1/4	1/8	1	84 3/4	.....	177 3/4	33 3/4	.....
Atlas 25	4	...	...	...	...	12	1 3/4	...	1 1/2	...	...	...	42 7/8	2 1/4	...	...	...	...	...	...	...	.....	177 3/4	...	.....
Atlas 40–2	4	1/8	1	1/4	V	12	1 3/4	11	1 1/2	33 1/2	1 1/2	F	22	3	1/4	1	42 7/8	2 1/4	1/8	2	130 1/8	75 1/8	218	34	11
Atterbury 20R–1 1/2	4	1/4	1	5/8	...	8	1 1/2	14	1 1/2	38 11/16	1 1/4	F	11 1/8	3 1/4	1/4	4	11 1/8	3 1/4	1/4	4	122 1/8	72 1/8	211 3/4	34	9 1/2
Atterbury 22C–2 1/2	4	1/4	1 1/4	5/8	...	10 1/2	1 1/2	16	1 1/2	40 1/2	1 1/2	F	13 1/8	3 1/2	1/4	4	13 1/8	3 1/2	1/4	4	129 1/4	78 3/4	225	34	9 1/2
Atterbury 22D–3 1/2	4	1/4	1 1/4	5/8	...	10 1/2	1 1/2	16	1 1/2	40 1/2	1 1/2	F	15 1/8	3 3/4	1/4	4	15 1/8	3 3/4	1/4	4	142 3/4	93 1/4	242	37 1/2	8 1/8
Atterbury 8E–5	3	1/4	1 1/2	5/8	...	14	2	20 1/2	2	40	2	F	17 3/4	4	1/4	4	17 3/4	4	1/4	4	157 1/8	80 1/8	263	37 1/2	10
Autocar XXI–F–1 1/2	4	1/8	1 1/8	...	...	3–4	1 1/16	9 1/2	1 1/16	...	...	...	16 1/4	2 1/2	1/8	4	13 1/2	2 1/2	1/8	4	91	67	156	34	9 1/2
Autocar XXI–G–1 1/2	4	1/8	1 1/8	...	...	3–4	1 1/8	9 1/2	1 1/8	...	...	...	16 1/4	2 1/2	1/8	4	13 1/2	2 1/2	1/8	4	114	90	179	34	9 1/2
Autocar XXVI–4–6	3	1/4	1 1/8	...	...	3 1/2	1 1/2	3 1/2	1 1/2	49 1/4	2	F	20 1/4	2 3/4	1/4	4	20 1/4	2 3/4	1/4	4	140	80 3/4	223	34 1/2	10
Autocar XXVI–4–6	3	1/4	1 1/8	...	...	3 1/2	1 1/2	3 1/2	1 1/2	49 1/4	2	F	20 1/4	2 3/4	1/4	4	20 1/4	2 3/4	1/4	4	176	116 3/4	259	34 1/2	10
Autocar XXVII–3	3	1/4	1 1/8	...	...	3 1/2	1 1/2	3 1/2	1 1/2	47 1/4	2	F	22 5/8	2	1/4	4	22 5/8	2	1/4	4	131 1/2	76	213	34 1/2	10 1/2
Autocar XXVII–3	3	1/4	1 1/8	...	...	3 1/2	1 1/2	3 1/2	1 1/2	47 1/4	2	F	22 5/8	2	1/4	4	22 5/8	2	1/4	4	155 1/2	100	237	34 1/2	10 1/2
Available H–1 1/2	4	1/8	2 1/4	1 1/8	...	11	1 5/8	14	1 5/8	40	2	...	48	2 1/2	1/4	2	36	2 1/2	1/4	2	120	80 1/2	201 1/4	32	9
Available H2	4	1/8	2 1/4	1 1/8	V	12	1 5/8	14	1 5/8	40	2	F	48	2 1/2	1/4	2	36	2 1/2	1/4	2	120	84 1/2	212	32	9
Available H–2 1/2	3	1/8	2 1/4	1 1/8	...	11	1 5/8	14	1 5/8	40	2	...	13 1/2	3 1/2	1/4	4	13 1/2	3 1/2	1/4	4	144	85 5/8	226 7/8	32	9
Available H3 1/2	4	1/8	2 1/2	1 1/8	V	12	1 5/8	14	1 5/8	42	2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	168	106 3/4	254 1/8	36	9
Available H5	3	1/4	2 1/2	1 11/16	...	12	2	16	2	40	2	...	18	4	1/4	4	18	4	1/4	4	168	112 5/8	263 1/8	38	9
Avery 1	3	1/8	....	1	....	10	2	6 1/2	2	31 3/4	1 1/2	F	19 1/2	2	1/8	4	18 1/2	2	1/8	4	85	49	169 1/2	34	13
Belmont B–1	3	1/4	1	1	V	10	2 1/4	12	2 1/4	33 1/2	3/4	F	36 1/2	1 1/2	1/4	1	34 1/2	1 1/2	1/4	1	85	50	165	34	11 1/4
Belmont D–2	3	1/4	1 1/4	1 1/4	V	10 1/2	2 1/4	9	1 3/4	34	2	F	51	3 1/4	1/4	1	47	2 1/4	1/4	1	119 5/8	87 1/2	212 3/8	34	11
Belmont F–3	3	1/4	1 1/4	1 1/4	V	10 3/8	2 1/4	14	1 3/4	34	2	F	51	3 1/4	1/4	1	47	2 1/4	1/4	1	137 1/2	88 1/2	233 1/2	34	11
Bessemer G–1	3	1/8	1	1/8	V	11 1/2	2 1/4	10	2 1/4	42	5/8	V	46	2 1/2	1/8	2	44	2 1/4	1/8	2	98 1/4	58 1/2	182 3/4	34	.....
Bessemer H–2–1 1/2	3	1/8	1	1/8	V	11 1/2	2 1/4	10	2 1/4	43	5/8	V	16 3/8	2	1/8	8	16 3/8	2	1/8	8	116	76	203	34	.....
Bessemer J2–2 1/2	3	1/8	1 1/4	1/8	V	12	1 1/2	5	1 7/8	36 1/4	1 1/4	F	18 3/8	2 1/4	1/4	8	18 3/8	2 1/4	1/4	8	142 3/8	92 1/4	229	34	.....
Bessemer K2–4	3	1/8	1 3/4	1/8	V	11 1/2	2 1/4	10	2 1/4	39 3/8	1 1/2	F	55	3 1/2	1/4	2	33	4 1/2	1/4	1	157 1/2	108	249	38	.....
Bethlehem KN–1	3	1/8	....	1	V	8 3/4	2 1/8	8	2 1/8	35 1/2	1 1/4	F	49 1/2	2 1/4	1/8	1	20	2 1/4	1/8	2	89 1/4	56 1/4	175	32 1/8	10 1/4
Bethlehem GN–2	3	1/8	....	1 1/4	V	8 1/2	2 3/8	9 1/2	2 3/8	40 7/8	1 1/2	F	52	2 1/2	1/8	1	37	2 1/2	1/8	1	116 3/4	74	208 1/4	34 1/2	9 1/4
Bethlehem HN–3	3	1/8	....	1 1/4	V	8 1/2	2 3/8	9 1/2	2 3/8	40 7/8	1 1/2	F	61	2 1/2	1/8	1	47	2 1/2	1/8	1	134 3/4	81 1/2	226 1/4	34 1/2	8 1/4
Betz J3–1	3	1/8	1	1 1/4	V	12	1 1/2	17	1 1/4	33 1/2	1 1/2	F	11	3	1/4	4	11	3	1/4	4	126	90	215	34	10
Betz D3–2 1/2	3	1/4	1 1/4	1/4	V	12	2 1/2	12	1 1/2	33 1/2	1 1/4	F	12	3 1/2	1/4	4	12	3 1/2	1/4	4	Opt.	.....	.....	34	.....
Brinton C–1 1/2	3	1/8	1 1/8	5/8	...	11	1 1/4	13	1 1/4	33	11/16	F	39	2 1/2	1/8	1	38	2 1/2	1/8	1	118	.....	.....	.....	33
Brinton D–2 1/2	3	1/8	1 11/16	5/8	...	11	1 1/4	13	1 1/4	33	11/16	F	13	3 1/2	1/4	2	13	3 1/2	1/4	2	135 1/2	.....	.....	.....	33
Brockway S2–1 1/2	3	1/8	1	....	V	10 1/2	2 1/4	5 1/2	2 1/4	39	1 1/4	F	20	2	1/4	4	20	2	1/4	4	118	72	118 1/2	32	.....
Brockway K4–2 1/2	3	1/8	1 1/4	....	V	6 1/2	1 3/4	13	1 1/4	34	1 1/4	F	13	3 1/2	1/4	4	13	3 1/2	1/4	4	142	89 1/2	123 1/2	34	.....
Brockway R–2–3 1/2	3	1/8	1 1/4	....	V	9 1/2	1 1/4	14	1 1/4	34	1 1/2	F	15 1/16	3 3/4	1/4	4	15 1/16	3 3/4	1/4	4	176	102 3/4	175	36	.....
Brockway T–5	3	1/4	1 1/2	....	V	13	2	22	2	40 3/8	2	F	17 3/4	4	1/4	4	17 3/4	4	1/4	4	176	104 1/2	176	36	.....
Buffalo	4	1/8	1 1/4	1/8	V	7	1 5/8	13	1 5/8	41 1/2	2	F	21	2 1/4	1/4	4	21	2 1/4	1/4	4	124	82 1/2	224	34	9 1/4
Casco A–1	4	1/8	1 1/8	1/8	V	12	1 3/4	14 1/2	1 1/4	34 3/4	1 1/2	F	48 1/2	2 1/2	1/8	1	48	2 1/4	1/8	1	104	61	192 1/4	34	10
Case	3	1/4	1 11/16	1 11/16	V	7	1 1/2	6	1 1/2	47 1/8	2 1/4	F	25 1/2	2 1/2	1/4	4	24 1/4	2 1/4	1/4	4	106	59 1/2	210	31	13 1/2
Chicago C–1 1/2	4	1/4	1	1 1/2	V	12	1 1/2	15	1 1/2	34 1/2	2	F	21	2 1/2	1/4	4	10	2	1/4	4	145 1/2	75 1/8	211 1/2	32	.....
Chicago C–2 1/2	4	1/4	1 1/4	1 1/4	V	12	1 1/2	15	1 1/2	34 1/2	2	F	21	2 1/2	1/4	4	10	2	1/4	4	157 1/2	87 1/8	223 1/2	32	.....
Chicago C–3 1/2	4	1/4	1 1/4	1 1/4	V	12	1 1/2	15	1 1/2	34 1/2	2	F	25	3 1/4	1/4	4	12	2 1/4	1/4	4	170	84 1/2	249	36 3/4	.....
Chicago D–5	4	1/4	1 3/4	1 1/4	V	12	1 1/2	15	1 1/2	45	2	F	25	3 1/4	1/4	4	12	2 1/4	1/4	4	170	84 1/2	249	36 3/4	.....
Clinton 1 1/4	4	1/8	1	...	H	7 1/2	1 3/4	13	1 1/4	36 3/8	2	F	11 3/4	2 1/2	1/4	4	11 3/4	2 1/2	1/4	4	112	73 3/4	207	34	10
Clinton 2	4	1/8	1	...	H	11	1 3/4	12	1 1/4	36 3/8	2	F	11 3/4	3 1/4	1/4	4	11 3/4	3 1/4	1/4	4	131	81	233	33 1/4	9
Clinton 3	4	1/4	1 1/4	...	H	11	2	19	1 1/4	38 3/8	2	F	13 1/16	3 1/2	1/4	4	13 1/16	3 1/2	1/4	4	166	98	270 1/2	33 1/4	9 1/2
Clinton 4	4	1/4	1 1/4	...	H	11	2	19	1 1/4	38 3/8	2	F	15 5/8	3 3/4	1/4	4	15 5/8	3 3/4	1/4	4	163	105	270 1/2	38	8 1/2
Clinton 5	4	1/4	1 1/2	...	H	12	2	18	1 1/2	41	2	F	18	4	1/4	4	18	4	1/4	4	206 1/2	115	318	38	8
Clinton 5–7	4	1/4	1 1/2	...	H	12	2	18	1 1/2	41	2	F	18	4	1/4	4	18	4	1/4	4	130 1/2	91	242	38	10
Clydesdale 120B–5–6	3	1/4	1 11/16	...	V	9	2	18 1/2	2	46 1/2	2	F	18	4	1/4	4	18	4	1/4	4	131	.....	.....	38	.....
Clydesdale 90–3 1/2–4 1/2	3	1/8	1 5/8	...	V	9	1 1/2	14	1 1/2	42	1 1/2	F	16	3 3/4	1/4	4	16	3 3/4	1/4	4	143	.....	.....	38	.....
Clydesdale 65EX 2 1/2–3	3	1/8	1 5/8	...	V	9	1 1/2	14	1 1/2	42	1 1/2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	132	.....	.....	33 1/4	.....
Clydesdale 65X–2 1/2–3	3	1/8	1 11/16	...	V	11	1 1/2	11	1 1/2	11	1 1/2	F	13 1/4	3 1/2	1/4	4	13 1/4	3 1/2	1/4	4	137	.....	.....	33 1/4	.....

† 12 O. D. 7 1/4 I. D.

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Clydesdale 42–1½–2	3	⅞	1⅛	⅞	V	15	2	12	2	41	¾	V	12	3¼	¼	4	12	3¼	¼	4	117	.....	.....	34	.....
Clydesdale 20–1–1½	3	⅞	1⅛	⅞	V	15	2	12	2	41	¾	V	11¼	3	¼	4	11¼	3	¼	4	95	.....	.....	34	.....
Clydesdale 18–¾–1¼	3	⅞	1⅛	⅞	V	15	2	12	2	41	¾	V	11¼	2½	¼	4	11¼	2½	¼	4	95	.....	.....	34	.....
Clydesdale 10–¾–1¼	3	⅞	1⅛	⅞	V	9	2	9	2	41	¾	V	11¼	2½	¼	4	11¼	2½	¼	4	109	.....	.....	34	.....
Clydesdale 10A–1–¾–1¼	3	⅞	1⅛	⅞	V	9	2	9	2	41	¾	V	11¼	2½	¼	4	11¼	2½	¼	4	109	.....	.....	34	.....
Commerce 9–1500	3	⅞	1	⅞	V	10	2	10	2	44	¾	V	50	2	¼	4	48½	2	¼	4	92⅝	53⅜	193	34	9
Commerce 14B–3000	4	⅞	1	⅞	V	10	2	10	2	39¾	¾	V	11⅛	3¼	¼	4	11⅛	3¼	¼	4	117	75	210	34	8¾
Commerce 25B–5000	4	⅞	1	⅞	V	10	2	10	2	39¾	¾	V	11⅛	3¼	¼	4	11⅛	3¼	¼	4	132	84	228½	34	12½
Concord A–2	4	¼	1¼	⅞	V	9½	2	9½	2	42	1½	F	13	3½	¼	4	13	3½	¼	4	108¼	.....	.....	32¼	.....
Concord AX–2	4	¼	1¼	⅞	H	11	2⅜	9½	1½	34	2	F	12	3¼	¼	4	12	3¼	¼	4	122¾	.....	.....	32¼	.....
Concord B–3	4	¼	1¼	⅞	H	11	2⅜	9½	1½	34	2	F	13½	3½	¼	4	13½	3½	¼	4	122½	.....	.....	32¼	.....
Concord BX–3	4	¼	1¼	⅞	H	11	2⅜	9½	1½	34	2	F	13½	3½	¼	4	13½	3½	¼	4	155⅝	.....	.....	32¼	.....
Corbitt S–¾	3	⅞	1	⅞	....	8	2	14	2	38	⅝	F	19	2	¼	2	19	2	¼	2	105	.....	.....	34	.....
Corbitt D–1½	3	⅞	1¼	⅞	....	14	2	14	2	38	⅝	F	45¼	2	¼	1	45¼	2	¼	1	120	.....	.....	34	.....
Corbitt C–2	3	⅞	1¼	⅞	....	14	2	13	2	38	⅝	F	51½	2¼	¼	1	51½	2¼	¼	1	138	.....	.....	35	.....
Corbitt B–2½	3	⅞	1¼	⅞	....	14	1¼	13	1¼	36	1¼	F	51½	2¼	¼	1	51½	2¼	¼	1	138	.....	.....	35	.....
Corbitt AA–5	3	⅞	1½	⅞	....	13	1¼	8	1¼	36	1¼	F	69¼	3	¼	1	69¼	3	¼	1	160	.....	.....	38	.....
Corbitt A–4	3	¼	1¼	⅞	....	13	2	14	7	36	1¼	F	69¼	3	¼	1	69¼	3	¼	1	160	.....	.....	35	.....
Day-Elder AN–1½	3	⅞	1	⅞	V	6¾	1¾	12½	1½	.....	1¼	F	64	2½	¼	1	64	2½	¼	1	160	.....	.....	35	.....
Day-Elder BN–2	3	⅞	1	⅞	V	4	1½	12½	1½	.....	1½	F	64	2½	¼	1	64	2½	¼	1	160	.....	.....	35	.....
Day-Elder DN–2½	3	⅞	1¼	⅞	V	4	1½	12½	1½	.....	1½	F	64	2½	¼	1	64	2½	¼	1	160	.....	.....	35	.....
Day-Elder CN–3	3	¼	1¼	⅞	V	10½	2	12	1¼	.....	1½	F	10	3	¼	4	10	3	¼	4	106¾	62¾	191	35	.....
Day-Elder FN–4	3	¼	1½	⅞	V	7½	1½	12½	1½	.....	1½	F	11¾	3¼	¼	4	11¾	3¼	¼	4	118½	78¾	202¾	35	.....
Day-Elder EN–5–6	4	¼	1½	⅞	V	12½	2	.....	.....	.....	1¼	F	13	3½	¼	4	13	3½	¼	4	122½	72¾	212¾	35	.....
Denby 31–1¼	3	⅞	1	⅞	....	9	2	12	2	41	¾	V	13	3½	¼	4	13	3½	¼	4	123¼	77¼	216	35	.....
Denby 33–2	3	⅞	1	⅞	....	9	2	12	2	41	¾	V	13	3½	¼	4	13	3½	¼	4	120¾	81¾	214½	35	.....
Denby 35–3	3	⅞	1	⅞	....	8	1⅝	14¼	1¼	41	¾	V	15⅝	3¾	¼	4	15⅝	3¾	¼	4	120¾	85¾	220	37	.....
Denby 27–4	3	⅞	1¼	⅞	....	13	1¾	16¼	1¼	41	¾	V	17⅛	4	¼	4	17⅛	4	¼	4	97⅝	.....	.....	34	.....
Denby 210–5	3	⅞	1¼	⅞	....	13	1¾	16¼	1¼	38½	1½	F	8½	4	¼	2	52	2½	¼	2	120	.....	.....	33¼	.....
Dependable Dispatch A-1¼	4	¼	1	⅞	V	14	2¼	15	1¼	37½	2	F	8½	4	¼	2	46½	1½	¼	2	143¾	.....	.....	33¼	.....
Dependable C–2	4	¼	1	⅞	V	14	2¼	15	1¼	37½	2	F	8½	4	¼	2	51	3	¼	2	140	.....	.....	34	.....
Dependable D–2½	4	¼	1¼	⅞	V	10	2¼	11½	1¼	37½	2	F	8½	4	¼	2	58	2½	¼	2	140	.....	.....	34	.....
Dependable E–3	4	¼	1¼	⅞	V	10	2¼	11½	1¼	37½	2	F	8½	4	¼	2	89	2¼	¼	2	108	.....	.....	33½	.....
Dependable G–3½	4	¼	1¼	⅞	V	13	2	13	1¼	37½	2	F	8½	4	¼	2	38¼	2¼	¼	1	121	77	215	33	9½
Diamond T–75	3	¼	¾	1	....	8	1¼	6	1¼	33¼	1¼	F	22	2½	¼	2	38½	2½	¼	1	140	77	215	33	9½
Diamond T–O3–1	3	⅞	1	1¼	V	9	1¼	6	1¼	35	2	F	53¼	2½	¼	1	38½	2½	¼	1	152	92	248	33	9½
Diamond T–T–1½	3	⅞	1	1¼	V	9	1¼	8	1¼	35	2	F	53½	2½	¼	1	49	2½	¼	1	170	.....	.....	33	.....
Diamond T–U2–2½	3	¼	1¼	1½	V	10	1½	10	1½	35	2	F	63	2½	¼	1	49	2½	¼	1	90	57½	182½	34	.....
Diamond TK–3½	3	¼	1¼	1½	V	10	1½	10	1½	35	2	F	63	2½	¼	1	46⅝	2¼	¼	2	100	.....	.....	34	.....
Diamond T–EL–5	3	¼	1¼	1¾	V	9	2	21	2	40⅜	2	F	22	2½	¼	2	33	2½	¼	2	Opt	.....	.....	34	.....
Diamond T–S–5	3	¼	1	1	....	....	1½	8	1½	41	....	F	48	4	¼	2	46	2	¼	2	Opt	.....	.....	34	.....
Diehl A	4	⅞	1	1	....	....	1½	9	1½	42	....	F	18	4	¼	4	27	2	¼	4	Opt	.....	.....	34	.....
Dixon Model D	4	⅞	1¼	⅞	....	V	11	1½	10	1½	42	F	28	2½	¼	4	13	3½	¼	4	Opt	.....	.....	34	.....
Dixon Model C	4	⅞	1¼	⅞	....	V	11	1½	10	1½	42	F	13	3½	¼	4	13	3½	¼	4	Opt	.....	.....	37	.....
Dixon Model A	4	⅞	1¼	⅞	....	V	12	1½	10	1½	42	F	13	3½	¼	4	15⅝	3¾	¼	4	Opt	.....	.....	37	.....
Dodge Brothers–¾	4	⅞	1⅛	⅞	....	V	9	1½	7¼	1⅛	34½	1	19¼	2¼	¼	4	17⅛	4	¼	4	Opt	.....	.....	37	.....
D–Olt	3	⅞	1	⅞	....	V	18	2	18	2	36	1	54	3	¼	4	27	2	¼	4	90	48	174	.....	11
Dorris K–4–2	3	⅞	1¼	1¼	....	V	H	18	2	18	2	36	1	13½	3½	¼	4	13	3½	¼	4	126	71	221½	34½	9½
Dorris K7–3½	3	⅞	1¼	1¼	....	V	H	18	2¼	18	2	36	1	15¾	3¾	¼	4	15¾	3¾	¼	4	Opt	71	221½	34½	9½
Duplex E–3½	3	¼	1¼	1¼	....	V	H	18	2¼	18	2	36	1	9½	2½	¼	2	5½	2½	¼	4	Opt	71	221½	36	9½
Duplex A	4	⅞	1¼	1½	1	....	....	....	....	....	....	....	1	49½	3	¼	4	46	2	¼	1	63⅛	37⅛	159⅛	45	9⅜
Eagle 100–2	4	⅞	1¼	1½	V	V	14	2	16	1¼	33⅜	1½	19¼	1¾	¼	2	19¼	1¾	¼	1	240	68	166	34	11
Fageol 1½–2	3	¼	1¼	1½	V	V	10	2½	20	2½	37¾	1½	13¼	3½	¼	2	13¼	3¼	¼	2	142¾	96½	233½	34	9
Fageol 2½–3	3	¼	1¼	1⅛	V	V	10	1¼	14¾	1¼	34¾	1½	15½	3¾	¼	2	15½	3¾	¼	2	178½	130½	270½	36	9
Fageol 3½–4	3	¼	1⅛	2	V	V	9	1½	17½	1½	40½	1½	18	4	¼	2	18	4	¼	2	126	.....	.....	39⅜	.....
Fageol 5–6	3	¼	1⅛	2	V	V	9	1½	17½	1½	40½	1½	.....	.....	.....	....	.....	.....	.....	....	121	.....	.....	34	.....
Federal R–2–1	4	⅞	1	⅞	....	V	V	.....	.....	1½	.....	.....	.....	.....	.....	....	.....	.....	.....	....	Opt	.....	.....	36	.....
Federal S–21–1½	4	⅞	1	⅞	....	V	V	.....	.....	1½	.....	.....	.....	.....	.....	....	.....	.....	.....	....	120	.....	.....	30	.....
Federal S–22–1½	4	⅞	1	⅞	....	V	V	.....	.....	1½	.....	.....	.....	.....	.....	....	.....	.....	.....	....	141	.....	.....	34	.....
Federal U–2–2½	4	¼	1¼	⅞	....	V	V	.....	.....	1¼	.....	.....	.....	.....	.....	....	.....	.....	.....	....	159½	.....	.....	37¾	.....
Federal WL–4	4	¼	1¼	⅞	....	V	V	.....	.....	1¾	.....	.....	.....	.....	.....	....	.....	.....	.....	....	161¼	.....	.....	37¾	.....
Federal X2–5	4	¼	1½	⅞	....	V	V	.....	.....	1½	.....	.....	.....	.....	.....	....	.....	.....	.....	....	110	.....	.....	.....	.....
Federal Light Duty	4	¼	1¼	⅞	....	V	V	.....	.....	1¼	.....	.....	.....	.....	.....	....	.....	.....	.....	....	118	.....	.....	.....	.....
Federal Heavy Duty	4	¼	1¼	⅞	....	V	V	.....	.....	1½	.....	.....	.....	.....	.....	....	.....	.....	.....	....	118	.....	.....	.....	.....
Ford T–1	3	¼	1.06	1⅛	H	H	4	2	16	1¼	26⅛	1⅜	23⅜	1½	¼	1	12	1⅝	¼	1	134	.....	.....	.....	.....
Fulton F1–1½	4	⅞	1⅛	1⅛	H	H	11	2	11	2	36½	1½	43	2½	¼	1	40¼	1¾	¼	1	154	.....	.....	.....	.....
Fulton FX–1½	4	⅞	1⅛	1⅛	H	H	13	2	15	2	33½	1½	50½	3	¼	1	40¼	1¾	¼	1	154	.....	.....	.....	.....
Fulton C–2	4	⅞	1⅛	1⅛	H	V	13	2	15	2	37½	1½	48	2½	¼	1	25	2¾	¼	1	154	.....	.....	.....	.....
Fulton A–1	4	⅞	1⅛	1⅛	H	V	9¾	2	10	1¼	35½	1½	50½	3	¼	1	47½	2¼	¼	1	154	.....	.....	.....	.....
Fulton C–2	4	⅞	1⅛	1⅛	H	V	4	2	5	1½	40	1½	27	3½	¼	1	43	2¾	¼	1	154	.....	.....	.....	.....
F. W. D. B–3	4	⅞	1	1⅛	....	....	....	....	....	....	34	1½	11	2½	¼	1	25	2¾	¼	1	154	.....	.....	.....	.....
Garford 15–1	3	⅞	1	⅞	....	....	....	....	....	....	37	⅞	11¼	3¼	¼	4	11	3	¼	4	86	.....	.....	.....	.....
Garford 25B–1½	3	⅞	1¼	⅞	....	H	V	....	....	....	34	⅞	13⅛	3½	¼	4	11¾	3¼	¼	4	99	.....	.....	.....	.....
Garford 70H–2½	4	¼	1¼	⅞	....	V	V	....	....	....	39	2	15⅝	3¾	¼	4	13⅛	3½	¼	4	60	.....	.....	.....	.....
Garford 80–4	4	¼	1¼	⅞	....	V	V	....	....	....	39¼	2	15⅝	3¾	¼	4	15⅝	3¾	¼	4	123	23	.....	23	9¾
Garford 68D–5	4	¼	1½	⅞	....	V	V	....	....	....	39¼	2	17¾	4	⅜	2	21⅝	5	¼	4	198	32⅞	.....	32⅞	9½
Garford 150–A–7½	3	¼	1	⅜	....	V	V	2	2	12	1¼	32	10½	2	¼	4	11½	3	¼	4	198	32⅞	.....	32⅞	9¼
Gary F–1–1½	4	¼	1¼	⅜	V	V	13½	2	12	1¼	32	1	12	3¼	¼	4	12	3¼	¼	4	215½	73	34	10	
Gary I–2	4	¼	1¼	⅜	V	V	10	2	12	1¼	36	2	13½	3½	¼	4	13½	3½	¼	4	192	60	106	33¾	12
Gary J–2½	4	¼	1¼	⅜	V	V	13	2	16½	1¼	36	2	15¾	3¾	¼	4	15¾	3¾	¼	4	215½	73	120	34	10
Gary K–3½	4	¼	1½	⅜	V	V	14	2	18	1⅜	36½	1	18¼	4	¼	8	13⅛	3½	¼	8	200	36	9¾		
Gary M–5	3	¼	1¼	⅜	....	....	7½	1¾	11½	1¼	36½	¾	15⅝	3¾	¼	8	15⅝	3¾	¼	8	187	34	11		
Giant 16–2½	3	¼	1½	⅞	....	....	9½	1¾	12	1¼	36	⅝	49⅝	2⅜	¼	1	47	2¼	¼	1	200	34	9½		
Giant 17–3½	3	¼	1½	⅞	V	V	8¾	1½	8	1⅛	33½	⅝	49⅝	2⅜	¼	1	47	2¼	¼	1	214	34	9½		
G.M.C. K–16	4	¼	1¼	1⅝	V	V	10	1¾	9½	1¼	38½	⅝	15⅛	3¾	¼	2	15⅛	3¾	¼	2	251	36	9½		
G.M.C. K–20	4	¼	1¼	1⅝	V	V	11¾	1¾	9½	1¼	35¾	⅝	17½	4	¼	2	17¾	4	¼	2	251	36	10		
G.M.C. K–71	4	¼	1¼	1⅝	V	V	11¾	1¾	9½	1¼	35¾	⅝	13	3½	¼	2	13	3½	¼	2	251	36	11		
G.M.C. K–101	4	¼	1¼	1⅝	V	V	10	1¾	9½	1¼	35¾	⅝	20	2½	¼	2	20	1½	¼	2	215½	34	11½		
G.M.C. K–41	4	¼	1¼	1⅝	V	V	9	1¾	7¼	1¼	34½	⅝	26	2	¼	2	26	2	¼	2	215½	34	10¾		
Graham Bros.	3	¼	1	¼	1½	V	12	2¼	14½	2¼	29	1	48	2	¼	2	45⅛	1½	¼	2	192	32	10		
Gramm-Pioneer 10 Speed–1	3	¼	1	¼	1½	V	10¼	2	6	2	39	1	48½	2	¼	2	19¾	1¾	¼	2	242½	34	10¼		
Gramm-Pioneer 15–1½–2	3	¼	1	¼	1½	V	10¼	2	6	2	39	1	19¾	1¾	¼	2	19¾	2	¼	2	214	32	10		
Gramm-Pioneer 65–1½–2	3	¼	1	¼	1½	V	4½	1½	12	1½	32	1	8	5	¼	2	45	2	¼	2	226¾	36	9¾		
Gramm-Pioneer 125	3	¼	1¼	¼	1½	V	11	1½	9	1½	33¾	1	22¾	2¾	¼	4	22¾	2¼	¼	4	240¼	36	10¼		
Gramm-Pioneer 30–3	3	¼	1¼	¼	1½	V	11	1½	9	1½	33¾	1	22¾	2¾	¼	4	28¾	2¾	¼	4	263½	36	10¾		
Gramm-Pioneer 75P–3½	3	¼	1¼	¼	1½	V	11	1½	9	1½	33¾	1	28¾	2¾	¼	4	32⅛	2¾	¼	4	192	32	11⅛		
Gramm-Pioneer 40–4	3	¼	1¼	¼	1½	V	23¼	2	13¾	1⅜	40¾	1	49	2½	¼	2	47	1½	¼	2	242¼	32	10		
Gramm-Pioneer 50–5–6	3	¼	1¼	¼	1½	V	8	1¾	17½	1¼	37½	1¼	45	2	¼	2	45	2	¼	2	242¼	32	10		
G. W. W. Super	3	¼	1¼	¼	1¾	V	11	2	14	1¼	35⅝	2	50	2¼	¼	2	50	2¼	¼	2					
Harvey WOA–2	4	¼	1¼	2	....	V	11	2	14	1¼	35⅝	2													
Harvey WFB–2½	4	¼	1¼	2	....	V	11	2	14	1¼	35⅝	2													

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Harvey WHB–3½	4	⅛	1½	2	V	12	2	14	1¼	35 5/16	2	F	20¾	4	⅛	4	20¾	3	⅛	4	153¾	85¾	260⅞	35	9
Harvey WFT–6	4	⅛	1¼	2	V	11	2	14	1¼	35 5/16	2	F	50	2¼	⅛	2	50	2¼	⅛	2	88	52	189 1/2	32	10
Harvey WHT–10	4	¼	1½	2	V	12	2	14	1¼	35 5/16	2	F	20¾	4	¼	4	20¾	3	¼	4	93	52½	191⅛	35	9
Hawkeye O	4	1/2	....	1	V	12	2	9	1¼	.....	1½	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye K	4	1/2	....	1	V	12	2	9	1¼	.....	2	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye M	4	⅛	....	1¼	V	12	2¼	9	1½	.....	2	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hawkeye N	4	¼	....	1¼	V	14	2½	12	1½	.....	2½	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hug T	4	1/2	....	1 3/16	V	12	1⅝	13	1¼	.....	1 5/8	F	48	2½	1/16	2	.....	.....	.....	.....	Opt	.....	.....	.....	.....
Hurlburt A1½–2	3	...	1¼	1	....	.....	.....	.....	.....	.....	.....	...	22	2	1/16	2	22	2	⅛	2	132	.....	.....	35½	.....
Hurlburt B2½	3	1/2	1¼	1	....	.....	.....	.....	.....	.....	.....	...	24	2½	⅛	2	23	2½	⅛	2	154	.....	.....	34	.....
Hurlburt C3½–4	3	¼	1½	1¼	....	.....	.....	.....	.....	.....	.....	...	26	3	⅛	2	25	3	⅛	2	144½	.....	.....	34	.....
Hurlburt D5–5½	3	¼	1½	1¼	....	.....	.....	.....	.....	.....	.....	...	28	3	¼	2	27	3	¼	2	144½	.....	.....	34	.....
Indiana 12–1½	3	⅛	1¼	....	....	17	1¼	14	1¼	38½	1	F	19	2	1/2	4	19	2	1/2	4	120	76	207¾	32	10¼
Indiana 20–2	3	⅛	1¼	....	....	6	1¼	13	1¼	26 3/8	1½	F	22¼	2¼	⅛	4	22¼	2¼	⅛	4	126	74½	217 1/16	33	10¼
Indiana 25–2½	3	⅛	1¼	....	....	6	1¼	13	1¼	26 3/8	1½	F	22¼	2¼	⅛	4	22¼	2¼	⅛	4	138	81	229 1/16	33	9¾
Indiana 35–3½	3	⅛	1¼	....	....	6	1¼	13	1¼	26 3/8	1½	F	20¾	4	⅛	4	20¾	....	⅛	4	144	84¾	235 1/32	34½	8¾
Indiana 51–5	3	⅛	1½	....	V	10	1½	17½	1½	40½	1¾	F	65 1/16	3	3/8	2	65 1/16	3	3/8	2	156¼	91	253	37½	10½
Inter'l S—2000 lbs.–Sp. Tr.	3	¼	1¼	1¼	V	9¾	2¼	17¾	2¼	30¼	1	F	38	2	1/2	2	36	2	1/2	2	88	.....	.....	34	.....
International 21–2000 lbs.	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1½	F	43¾	2¼	⅛	2	43¾	2¼	⅛	2	76	.....	.....	34	.....
International 31–3000 lbs.	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1½	F	43¾	2¼	⅛	2	43¾	2¼	⅛	2	106½	.....	.....	34	.....
International 41–4000 lbs.	3	¼	1¼	1¾	V	6	1½	3½	1⅛	38⅛	1½	F	50 5/8	2¼	⅛	2	50 5/8	2¼	⅛	2	111 1/2	.....	.....	32¼	.....
International 52–Bus	4	¼	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	10¾	2¼	¼	4	50 5/8	3	⅛	2	216	.....	.....	34	.....
International 61–6000 lbs.	4	¼	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	50 5/8	2¼	⅛	2	50 5/8	2¼	⅛	2	118 1/4	.....	.....	34	.....
International 62 Tractor Tr.	4	¼	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	50 5/8	2¼	⅛	2	50 5/8	2¼	⅛	2	.....	.....	.....	34	.....
International 63-6000	4	¼	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	50 5/8	2¼	1/8	2	50 5/8	2¼	1/8	2	118 1/4	.....	.....	34	.....
International 101–10,000	4	¼	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	73 1/2	2½	⅛	2	73 1/2	2½	⅛	2	147⅝	.....	.....	34	.....
International 102 TractorTr	4	¼	1¼	1¾	V	9	2¼	14½	2	.....	.....	...	73 1/2	2½	⅛	2	73 1/2	2½	⅛	2	.....	.....	.....	34	.....
Kearns H–1	3	1/2	1	1/2	H	16	2	16	2	33	1	F	42	2	1/2	1	21	2	1/2	2	90	.....	.....	34	.....
Kearns N–1½	3	1/2	1	1/2	H	18	2	18	2	33	1	F	45	2½	1/2	1	22	2¼	1/2	2	133½	.....	.....	34	.....
Kelly-Springfield K33–1½	4	1/2	1¼	1 1/16	V	12¼	1½	26¾	1½	65 5/8	1	V	17⅜	1⅞	1/2	4	17⅜	1⅞	1/2	4	133½	.....	.....	34	.....
Kelly-Springfield K380–2½	4	1/2	1¼	1 1/16	V	12¼	1½	26¾	1½	65 5/8	1	V	17⅜	1⅞	1/2	4	17⅜	1⅞	1/2	4	141	.....	.....	34	.....
Kelly–Springfield K–39–2½	4	1/2	1¼	1 1/16	V	12¼	1½	26¾	1½	65 5/8	1	V	3 1/2	4½	1/16	12	21¼	2½	1/2	4	141	.....	.....	34	.....
Kelly-Springf'd K41–3½–5	4	⅛	1¼	1 1/16	V	6¼	1⅝	24	1½	59 5/8	1	V	3 1/2	4½	1/16	12	25 1/8	2½	1/2	4	144	.....	.....	36	.....
Kelly-Sprinf'd K61–5 to 7	4	⅛	1¼	1 1/16	V	6¼	1⅝	24	1½	59 5/8	1	V	3 1/2	4½	1/16	12	25 1/8	2½	1/2	4	144	.....	.....	36	.....
Kenworth KS–2½	4	⅛	1¼	1¾	H	12	2	14	1¼	36	2	...	20	2¼	⅛	4	20	2¼	⅛	4	133	.....	.....	34	.....
Kenworth M–1½	4	⅛	1¼	1¾	H	12	2	14	1¼	36	2	...	46	2	⅛	2	46	2	⅛	2	114	.....	.....	32	.....
Kenworth L–3	4	⅛	1¼	1¾	H	13½	2	16	1¼	36	2	...	56	2½	⅛	2	56	2½	⅛	2	144	.....	.....	36½	.....
Keystone 40–2	3	⅛	1	1/2	V	8	2½	8	2½	38	1	F	50½	3	1/2	1	46¾	2	1/2	1	124	80	214	33	12
Lange F	4	⅛	1 1/2	1⅝	V	5	1½	15½	1½	45	1½	F	15¾	3⅜	⅛	4	15¾	3⅜	⅛	4	139	88	227½	37	9½
Lange E–2½	4	⅛	1 1/16	1⅝	V	9	1½	15½	1½	42	1½	F	18	3½	⅛	4	18	3½	⅛	4	139	85	229	33	10
Larrabee X2–1–1¼ Ton	3	1/2	1¼	1¾	V	6	1¼	14	1¼	34	1¼	F	48	2	1/2	2	48	2	1/2	2	108	59	205	34	11
Larrabee J4–1½–2¼ Ton	4	1/2	1	1½	V	6½	1¼	10	1½	41	1¼	F	24	2	¼	4	24	2	¼	4	108	67½	199	34	10½
Larrabee K5–2½–3½ Ton	4	¼	1¼	1¾	V	6	1½	11	1½	45½	1½	F	27	2¼	¼	4	27	2¼	¼	4	Opt	Opt	Opt	34	9¾
Larrabee L4–3½–4½ Ton	4	¼	1¼	1¾	V	6	1½	11	1½	45½	1½	F	60	2½	¼	2	60	2½	¼	2	Opt	Opt	Opt	36	9
Larrabee W–5–7	4	¼	1½	2¼	V	8½	2	17½	2	44½	2	F	72	3	¼	2	72	3	½	2	152	.....	.....	36	.....
Luedinghaus K2	3	¼	1¼	1 1/2	....	9	1⅛	5	1¼	.....	1½	F	53.4	2½	¼	2	38½	2½	¼	2	120	.....	.....	34	.....
Luedinghaus K2–LS	3	¼	1¼	1 1/2	....	9	1¼	5	1¼	.....	1½	F	53.4	2½	¼	2	38½	2½	¼	2	145½	.....	.....	34	.....
Maccar EX	3	1/2	1	3/16	V	4½	1½	15	1½	35½	1¼	F	50	2	1/2	2	48	2	1/2	2	101 5/8	68	192¼	37	9¼
Maccar L–1, 1½	4	1/2	1¼	3/16	V	4	1½	19	1½	35	2	F	11⅝	3¼	¼	4	11⅝	3¼	¼	4	125¾	74¼	228½	34	10⅛
Maccar H–1, 3	4	¼	1¼	3/16	V	4	1¾	19	1½	37½	2	F	13 1/2	3½	¼	4	13 1/2	3½	¼	4	139¾	79¾	243⅜	34	10
Maccar M–2, 4	4	¼	1¼	3/16	V	4	1¾	19	1½	37½	2	F	14¾	3¾	¼	4	14¾	3¾	¼	4	153¾	91¾	257⅜	34	8¾
Maccar G–1, 5	4	¼	1½	3/16	V	8	1¾	16½	1¾	40¾	2	F	18	4	¼	4	18	4	¼	4	163⅞	99⅞	278	37½	10
Maccar HT	4	¼	1¼	3/16	V	4	1¾	19	1½	35	2	F	13 1/2	3½	¼	4	13 1/2	3½	¼	4	139¾	79¾	243⅜	34	10
Mack AB–1¼, 2, 2½–T.–Ch	3	1/2	1¼	1 3/16	V	7½	1¼	5 5/16	1¼	36 9/16	1¼	F	11 5/8	4	¼	2	16½	2½	¼	4	Opt	.....	.....	33¼	.....
Mack Dual R'd'n–1½, 2, 2½	3	1/2	1¼	1 3/16	V	7½	1¼	5 5/16	1¼	36 9/16	1¼	F	12	3¼	¼	2	12	6	¼	2	Opt	.....	.....	33¼	.....
Mack AB–Tractor–5	3	1/2	1¼	1 3/16	V	7½	1¼	5 5/16	1¼	36 9/16	1¼	F	11 5/8	4	¼	2	16½	2½	¼	4	77	.....	.....	33¼	.....
Mack AC–3½, 5, 6½, 7½	3	1/2	1½	1 3/8	V	5	1¾	3¼	2	.....	.....	...	16 3/8	3	¼	4	20½	3½	¼	4	Opt	.....	.....	37½	.....
Mack AC–Trac.–7,10,13,15	3	⅛	1½	1 3/8	V	5	1¾	3¼	2	.....	.....	...	16 3/8	3	¼	4	20½	3½	¼	4	87	.....	.....	37½	.....
Mason Road King	3	⅛	1½	....	V	11½	2	14½	1½	.....	1½	F	42 1/2	2¼	⅛	1	40⅝	2¼	1/2	1	85	56 1/4	175	30	10
Master 22–1½	4	¼	1¼	1 1/4	V	13½	2	12½	1¼	30½	1	F	12	3¼	¼	2	12	3¼	¼	2	Opt	.....	.....	34½	.....
Master 41–2½	4	¼	1¼	1 1/4	V	13½	2	12½	1¼	31	1¼	F	13¼	3½	¼	2	13¼	3½	¼	2	117½	.....	.....	34	.....
Master 51–3½	4	¼	1½	1 1/4	V	13½	2	15	1¼	35	2	F	16	3¾	¼	2	16	3¾	¼	2	147¾	.....	.....	36¾	.....
Master 61–5	4	¼	1½	1 1/4	V	13½	2	15	1¼	35	2	F	13¼	4	¼	2	18	4	¼	2	162½	.....	.....	36¾	.....
Master 64–5–6	4	¼	1½	1 1/4	V	13½	2	15	1¼	37	2	F	13¼	4	¼	2	18	4	¼	2	162½	.....	.....	39	.....
Maxwell 1½	3	⅛	1	1	V	7¾	2½	3½	2½	36½	1/2	...	31	1½	1/2	4	24 5/8	2	1/2	1	102	.....	.....	36	.....
Menominee Hurryton–1	3	⅛	1¼	1¾	V	6	1½	12	1¼	40	1¼	F	11	2½	⅛	4	11	2½	¼	4	102 1/2	.....	197	33	10½
Menominee H–1½	3	⅛	1¼	1¾	V	.....	.....	.....	.....	.....	.....	...	13½	3½	⅛	8	.....	.....	.....	.....	122	.....	216	32	10⅝
Menominee D–2½	3	⅛	1¼	1¾	V	3	1¾	3	1½	37¾	2	F	13½	3½	⅛	8	42½	2½	1/2	2	146	.....	224	32	10⅝
Menominee HT–1¼	3	⅛	1	1½	V	9¼	1¾	10½	1¾	33¾	1¼	F	47 1/2	2½	⅛	2	33¾	2½	1/2	2	102¾	.....	192	32	10⅝
Menominee J–3, 5	3	⅛	1½	2	V	3	1¾	3	1¾	40¾	2	F	69 1/2	3½	⅛	2	52	2½	1/2	2	149	.....	246	38	9
Menominee G–3½	3	⅛	1¼	1¾	V	3	1¾	3	1¾	37¾	2	F	15½	3¾	⅛	4	15½	3¾	⅛	4	149	.....	246	36	9
Moreland RR	3	⅛	1	1¼	V	8	1½	11¼	1½	34	1¼	F	49	2½	⅛	4	46	2½	1/2	2	108	56 1/2	208½	34	.....
Moreland BX–1½	3	⅛	1	1¼	V	8	1½	11¼	1½	34	1¼	F	12	3¼	⅛	4	12	3¼	⅛	4	108	56 1/2	208⅜	34	.....
Moreland EX–2	3	⅛	1¼	1¼	V	9	1½	14	1½	42	1¼	F	12	3¾	⅛	4	12	3¾	⅛	4	132	79½	226¼	34	.....
Moreland AX–3	3	⅛	1¼	1½	V	9	1½	13	1½	42	1¼	F	13½	3½	⅛	4	13½	3½	⅛	4	174	101¼	253	34	.....
Moreland RX–5	4	⅛	1½	1¼	V	8	1½	14½	1½	42	2	F	15½	3¾	⅛	4	15½	3¾	⅛	4	192	115¼	271	38	.....
Moreland RC–Bus	3	⅛	1	1¼	H	8	1½	11¼	1½	34	1½	F	49	2½	⅛	2	46	2½	1/2	2	156	100	256	34	7
Moreland EC–Bus	3	⅛	1¼	1½	H	9	1½	13	1½	42	1½	F	13½	3½	⅛	4	13½	3½	⅛	4	152	102	254	34	8
Moreland AC–Bus	3	⅛	1¼	1½	H	9	1½	13	1½	42	1½	F	15½	3¾	⅛	4	15½	3¾	⅛	4	171	114¼	271	44	7
Nash 2018–1–1½	4	⅛	1¼	1¼	....	3	1½	7¾	1¼	36	1	F	49 1/2	2	1/2	2	20 1/2	2½	1/2	1	104½	61	193	30½	9¾
Nash 3018–2–2½	4	⅛	1¼	1¼	....	3	1½	.....	.....	44	1	F	50 1/2	3	⅛	2	20 1/2	2½	1/2	1	118¾	65	207	31½	9¾
Nash 4017–2–2½	3	⅛	1¼	1¼	....	7	1½	.....	.....	44	2	F	49¼	2½	⅛	4	25 1/2	2½	⅛	1	117½	85½	202½	38½	14¾
Nelson & LeMoon G–2	4	⅛	1¼	1/2	V	9	1¾	3½	1⅜	41¼	1¼	...	12	3¼	⅛	2	12	3¼	⅛	2	Opt	.....	.....	.....	11
Nelson & LeMoon G–3	4	⅛	1¼	1/2	V	9	1¾	3½	1⅜	41¼	1¼	...	13½	3½	⅛	2	13½	3½	⅛	2	Opt	.....	.....	.....	11
Nelson & LeMoon G–4	4	⅛	1½	1/2	V	9	1¾	3½	1⅜	41¼	1¼	...	16½	3¾	⅛	2	16½	3¾	⅛	2	Opt	.....	.....	.....	11
Nelson & LeMoon G–5	4	⅛	1½	1/2	V	12	2	6	2	40½	2	...	18	4	⅛	2	18	4	⅛	2	Opt	.....	.....	.....	11
Netco DK–2	3	1/2	1¼	1 1/2	V	12	1½	16	1¼	40 1/2	1½	F	13 1/2	3½	⅛	4	13 1/2	3½	⅛	4	142	94	234½	34¼	9
Neteo HL–2½–3	3	1/2	1¼	1 1/2	V	13	1½	16	1¼	41¼	1½	F	13 1/2	3½	⅛	4	13 1/2	3½	⅛	4	139½	93½	234½	34¼	9
Niles E–2	3	1/2	1¼	1¼	V	8	1¼	11	1¼	30	3/4	...	12	3¼	⅛	2	12	3¼	⅛	2	147	75	202	56	9½
Niles H–2½	4	⅛	1¼	1¼	V	12	2	10	1¼	35	2½	F	13 1/2	3½	⅛	2	13 1/2	3½	⅛	2	147	75	214	34½	9½
Ogden A–2–¾	3	1/2	1	1	H	12	2	6	2	44	3/4	V	11	2½	⅛	4	11	2½	⅛	4	108	56	186	33¼	10½
Ogden D–1½	3	1/2	1	1	V	13	2	12	2	44	3/4	V	10 1/4	3	⅛	4	10 1/4	3	⅛	4	120	.....	.....	33¼	.....
Ogden E–2½	3	1/2	1¼	2	V	10	1 1/2	14	1 1/2	30	1¼	F	52	2¼	⅛	1	52	2¼	⅛	1	144	.....	.....	33¼	.....
Ogden F–3½	3	1/2	1¼	2	V	11	1/2	16	1½	36	1½	F	15½	3¾	⅛	4	10½	3¾	⅛	4	168	.....	.....	37	.....
Ogden G–5	3	1/2	1¼	3	V	9	2	18	2	40	2	F	11	6	⅛	2	25	4	⅛	4	168	.....	.....	37	.....
Old Reliable B–2½	3	1/2	1¼	1¼	....	.....	.....	.....	.....	.....	.....	...	54	2	⅛	1	54	2	⅛	1	144	.....	.....	32	.....
Old Reliable C–3½	3	1/2	1½	1½	....	.....	.....	.....	.....	.....	.....	...	60	2½	⅛	1	60	2½	⅛	1	150	.....	.....	32	.....
Old Reliable D–5	3	1/2	1½	1½	....	.....	.....	.....	.....	.....	.....	...	72	3	⅛	1	72	3	⅛	1	156	.....	.....	34	.....
Old Reliable K. L. M.–7	3	1/2	1½	1½	....	.....	.....	.....	.....	.....	.....	...	54	3½	⅛	1	60	4	⅛	1	158	.....	.....	36	.....
Oldsmobile T–1	3	1/2	1¼	1½	V	6¼	1¼	10½	1¼	40½	3/4	V	42¼	2	1/2	2	41 1/2	2	1/2	1	92½	60⅞	177¾	34	12⅜
Oneida B9–2	3	1/2	1¼	1½	H	9½	1¼	9½	1¼	38½	2	F	48	2½	1/2	2	34	2½	1/2	2	114	.....	.....	34	.....

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Oneida C9–2½	3	⅛	1¼	1½	H	9½	1¼	9½	1¼	38¼	2	F	58	2½	⅛	2	43	2½	⅛	2	138	.....	.....	34	.....
Oneida D9–3½	3	¼	1¼	1½	H	7	1½	9½	1½	40	2	F	16	3¼	⅛	4	16	3¼	⅛	4	155¾	.....	.....	36	.....
Oneida E9–5	3	¼	1¼	1½	H	7½	1¼	9½	1½	40	2	F	18	4	⅛	4	18	4	⅛	4	177	.....	.....	38	.....
Oshkosh A–2	3	⅛	1¼	1½	H	16	2	17	2	33¼	1¼	F	23⅝	3½	¼	1	43½	2½	⅛	2	108	75⅝	189	34	.....
Oshkosh AA–2	3	⅛	1¼	1½	H	16	2	17	2	33¼	1¼	F	23⅝	3½	¼	1	43½	2½	⅛	2	144	110⅝	224	34	.....
Oshkosh B–2½	4	⅛	1¼	1¾	V	9¾	1½	12	1½	36½	2	F	23⅝	4½	¼	1	43½	2½	⅛	2	125	85½	211	34	.....
Oshkosh BB2½	4	⅛	1¼	1¾	V	9¾	1½	12	1½	36½	2	F	23⅝	4½	¼	1	43½	2½	⅛	2	144	104½	230	34	.....
Overland ½	4	⅛	1⅛	⅜	H	12	2	7¼	2	33¼	⅞	F	31	1½	¼	2	27	1¼	⅛	2	44¾	68¼	127¼	26	9½
Parker B–23	4	1	1¼	⅜	V	9	2	6	1¼	32	1½	F	42	2¾	¼	2	42	2¾	⅛	2	94½	58½	184½	33	10
Parker E–24	3	⅛	1	1¼	V	4	1¼	6	1¼	35¼	1¼	F	11¾	3¼	¼	4	11¾	3¼	¼	4	113½	70½	200	33	9¾
Parker G24–2½	3	¼	1¼	1½	V	19	1¾	16½	1½	38	2	F	10¾	5	¼	2	19	2½	¼	4	127	79	219	33	9⅛
Parker J24–3½	3	¼	1¼	1½	V	19	1¾	16½	1½	38	2	F	10¾	5	¼	2	19	3½	¼	4	139½	90	231½	33	11
Parker M20–5	3	¼	1½	1¾	V	14	1¾	18	1¾	40½	2	F	10¾	5	¼	2	24½	4	¼	4	145	83½	243½	37	10¼
Patriot Revere–1	3	⅛	1⅛	⅜	H	8	2	9	2	39	1¼	F	40½	1¾	⅛	1	40½	1¾	⅛	1	93	56	184	33¼	11¾
Patriot Lincoln Special–2	3	⅛	1⅛	⅜	V	6	1¼	8	1½	37	1¾	F	40½	1¾	⅛	1	40½	1¾	⅛	1	113	65	207	34	10
Patriot Washington Spl.–3	3	⅛	1⅛	⅜	V	11	1½	10	2	39	2	F	58	2½	¼	1	43	2½	¼	1	150	82	246	34	10
Penn	3	¼	1	.....	V	8	2⅛	8	2⅛	38	1	F	50½	3	¼	4	46¾	2	¼	4	124	80	214	38	12
Perfection A	3	⅛	1	⅛	V	9	2	6	2	43¾	⅝	F	10⅛	2½	¼	4	10⅛	2½	¼	4	95¾	67¼	175	32	10½
Perfection B	3	⅛	1	⅛	V	9	2	6	2	43¾	⅝	F	10⅛	2½	¼	4	10⅛	2½	¼	4	104¾	76¾	184	32	10½
Perfection C	4	¼	1¼	1⅝	V	9½	2	14	1½	41½	1½	F	10	2½	¼	4	10	2	¼	4	117⅝	78⅝	217	34	10¼
Perfection D	4	¼	1¼	1⅝	V	9½	2	14	1½	41½	1½	F	10	2½	¼	4	10	2	¼	4	103⅝	64⅝	203	34	9½
Perfection E	4	¼	1½	1⅝	V	12	2	6	2	40¾	2	F	12	3¼	¼	4	12	2¼	¼	4	116¾	80½	205	38	12½
Perfection EA	4	¼	1½	1⅞	V	12	2	6	2	40¾	2	F	12	3¼	¼	4	12	2¼	¼	4	146¾	110¼	235	38	12½
Pierce Arrow XA–2	3	⅛	1	1⅝	V	16⅜	2½	14¼	2⅛	43½	1½	F	22	2¼	¼	4	22	2¼	¼	4	125	70¼	225	34½	8½
Pierce Arrow XB–3	3	⅛	1	1⅝	V	16⅜	2½	14¼	2⅛	43½	1½	F	22	2¼	¼	4	22	2¼	¼	4	125	70¼	225	34½	8½
Pierce Arrow WC–4	3	⅛	1	1⅞	V	11	2½	15½	2⅛	43½	1½	F	9	6	¼	2	18	4¾	⅛	4	133¼	78¾	237	38½	7¼
Pierce Arrow WD–5	3	⅛	1	1⅞	V	11	2½	15½	2⅛	43½	1½	F	9	6	¼	2	18	4¾	⅛	4	133¼	78¾	237	38½	7¼
Pierce Arrow RE–6	3	⅛	1	1⅞	V	11	2½	15½	2⅛	43½	1½	F	9	6	¼	2	20⅞	4¾	⅛	4	139¼	84¾	243	38½	8¼
Pierce Arrow RF–7½	3	⅛	1	1⅞	V	11	2½	15½	2⅛	43½	1½	F	9	6	¼	2	20⅞	4¾	⅛	4	139¼	84¾	243	38½	8¼
Pierce Arrow XB–TT	3	⅛	1	1¼	V	16⅜	2½	14¼	2⅛	43½	1½	F	22	2¼	¼	4	22	2¼	¼	4	77	48¼	172½	34½	8½
Pierce Arrow WD–TT	3	⅛	1	1⅞	V	11	2½	15½	2⅛	43½	1½	F	9	6	¼	2	18	4¾	⅛	4	77¼	48¾	173⅝	38½	7¼
Pierce Arrow RF–1T	3	⅛	1	1⅞	V	11	2⅜	15½	2⅛	43½	1½	F	9	6	¼	2	20⅞	4¾	⅛	4	77¼	48¾	173⅝	38½	8¼
Pioneer 59AA–1	3	⅛	1	1½	V	13	2	12	2	35	1	F	14	1¾	¼	4	14	1¾	¼	4	102	.....	.....	30	.....
Pittsburgher 2½	3	⅛	1¼	1½	V	6	1½	12	1¼	37	1	F	52	2¼	¼	2	52	2¼	¼	2	136	.....	.....	33	.....
Power F–2½	3	⅛	1	.....	V	8	1¼	12	1¼	36	2	F	26	2	¼	4	26	2	¼	4	143	.....	.....	32	12
Power C–3½	3	¼	1¼	.....	V	9	1½	12	1½	36	2	F	59	2¼	⅛	1	45	2½	¼	1	.....	.....	.....	.....	12
Rainier R31–¾	3	⅛	1	⅛	V	9	2	6	2	43¾	⅝	F	11	2½	¼	4	11	2½	¼	4	86½	50⅛	181	34	11¾
Rainier R-29–1	3	⅛	1	⅛	V	9	2	6	2	43¾	⅝	F	11	2½	¼	4	11	2½	¼	4	96½	57⅛	190¼	34	10¼
Rainier R36–1½	4	¼	1	⅛	V	8	1½	14	1½	40	1¼	F	11¾	3¼	¼	4	11	3¼	¼	4	111	72¼	206½	34	9⅝
Rainier R28–2–2½	4	¼	1¼	⅛	V	9½	1½	14	1½	42	1¼	F	20	2¼	¼	4	20	2¼	¼	4	124¾	80½	225	33	9⅝
Rainier R20–2½–3	4	¼	1¼	⅛	V	9½	1½	14	1½	42	1¼	F	13	3½	¼	4	13	3½	¼	4	137½	85½	241⅝	33	10
Rainier R25–3½–5	4	¼	1½	⅛	V	9½	1½	14	1½	42	1¼	F	15½	3¾	¼	4	15½	3¾	¼	4	157½	91	263⅞	37	8¾
Rainier R27–6	4	¼	1½	⅛	V	9½	1½	14	1½	42	1¼	F	18	4	¼	4	18	4	¼	4	154½	88	263⅞	37	9½
Reo F–2500 lbs	3	⅛	1	1¼	V	5½	1	5½	1	39	⅞	F	45⅞	3	¼	1	40	3	¼	1	81	55	171	30	10½
Reynolds 23A–2	3	⅛	1¼	1¼	V	10½	1½	10½	1½	35	2	F	24	2½	¼	4	24	2½	¼	4	136	.....	.....	33	.....
Reynolds 23B–3	3	⅛	1¼	1¼	V	10½	1½	10½	1½	35	2	F	24	2½	¼	4	24	2½	¼	4	156	.....	.....	33	.....
Reynolds 23C–25-pass. Bus	3	⅛	1¼	1¼	V	10½	1½	10½	1½	35	2	F	Opt	2½	¼	4	27	2½	¼	4	220	.....	.....	53½	.....
Rowe CDW–2	3	⅛	1¼	.....	V	10½	1¾	10½	1½	32½	1⅛	F	24	2½	¼	4	24	2½	¼	4	123	79	202½	33	10¼
Rowe CDW–2½	3	⅛	1¼	.....	V	20	1¾	15½	1½	36¼	2	F	24	2½	¼	4	24	2½	¼	4	123	103½	224	33	9¾
Rowe GSW–3	3	⅛	1¼	.....	V	20	1¾	15½	1½	36¼	2	F	24	2½	¼	4	24	2½	¼	4	140	96¼	224	33	9¾
Rowe HW–4	3	⅛	1¼	.....	V	20	1¾	15½	1½	36¼	2	F	56½	2½	¼	2	56½	2½	¼	2	146	96	230½	36	9
Rowe FW–5	3	⅛	1¼	.....	V	20	1¾	15½	1½	36¼	2	F	68	3	¼	2	68	3	¼	2	153	107¼	237½	38½	10½
Ruggles 15–¾	3	⅛	1	⅛	V	12½	2	20	2	34¾	1¼	F	43⅞	2	¼	2	39	1¾	⅛	2	128	97½	170	38½	9¾
Ruggles 20R–1¼	3	⅛	1¼	⅛	V	7½	2	13½	1¼	35	1½	F	48	2½	¼	2	46⅝	2¼	¼	2	96⅝	55⅜	186¾	34	11
Ruggles 20AR–1¼	3	⅛	1¼	⅛	V	7½	2	13½	1¼	35	1½	F	48	2½	¼	2	46⅝	2¼	¼	2	104½	65	194¾	34	11
Ruggles 40–2	3	⅛	1¼	⅛	V	7½	2	13½	1¼	35	1½	F	47½	2½	¼	2	33¼	2½	¼	2	134¾	75½	224	34	8¼
Ruggles 40H–2½	3	⅛	1¼	⅛	V	10½	1¾	10½	1¼	37	2	F	58	2½	¼	2	44	2½	¼	2	134¾	75½	224	34	9¾
Rumely A–1½	4	⅛	1⅛	1⅛	H	9	2	7	2	38¾	¾	F	19½	2	¼	4	19½	2	¼	4	122	72	214	34	11
Sandow G–1	3	⅛	1¼	1	H	9	2	7	2	38¾	¾	F	22¼	2¼	¼	4	22¼	2¼	¼	4	96	.....	205	34	10½
Sandow C–G–1½	3	⅛	1¼	1	H	9	2	7	2	38¾	¾	F	22¼	2¼	¼	4	22¼	2¼	¼	4	120	.....	.....	34	10½
Sandow J–2½	3	⅛	1½	1¼	V	7	1¼	13	1¼	39	⅞	F	11¾	3½	¼	4	11¾	3½	¼	4	Opt	.....	.....	32	10½
Sandow M–3½	3	⅛	1¾	1¼	V	9	1½	13	1¼	40	⅞	F	13½	4	¼	4	11¾	3½	¼	4	Opt	.....	.....	37	11
Sandow L–5													13½	4	¼	4	11¾	3½	¼	4	Opt	.....	.....	37	11
Sanford W15–1½	3	⅛	1	1	H	9	2¼	11	1½	40	⅝	V	22¼	2¼	¼	4	22¼	2¼	¼	4	120	71¾	205¾	32	11
Sanford 25– ½	3	⅛	1¼	1¼	V	8	1½	11	1½	32	1⅛	F	22¼	2¼	¼	4	22¼	2¼	¼	4	144	109½	238	35	9¾
Sanford 35–3½	3	⅛	1¼	1¼	V	9	2¼	11	1½	32	1⅛	F	55¾	2½	¼	2	55¾	2½	¼	2	144	97½	244	35	8¼
Sanford 50–5	3	⅛	1¼	1¼	V	9	2¼	11	1½	32	1⅛	F	65	2	¼	2	65	2	¼	2	144	97½	244	35	10½
Schacht F–2	4	¼	1¼	2	H	11	2	14	1¼	37½	2	F	8¼	3	¼	4	13½	3	¼	4	140	.....	.....	35¾	.....
Schacht F–3	4	¼	1¼	2	H	11	2	14	1¼	37½	2	F	8¼	3	¼	4	13½	3	¼	4	140	.....	.....	35¾	.....
Schacht E–4	4	¼	1¼	2	H	10½	2	13½	1¼	39¼	⅞	F	8¼	3	¼	4	15	4	¼	4	152	.....	.....	35¾	.....
Schacht E–5	4	¼	1¼	2	H	10½	2	13½	1¼	39¼	⅞	F	8¼	3	¼	4	15	4	¼	4	152	.....	.....	35¾	.....
Schacht E–7	4	¼	1¼	2	H	10½	2	13½	1¼	39¼	⅞	F	8¼	3¼	¼	4	15	4	¼	4	152	.....	.....	35¾	.....
Schwartz 1¼	4	¼	1	⅛	H	7½	1¾	13	1¼	36⅝	2	F	11¾	2½	¼	4	11¾	2½	¼	4	112	73¾	207	34	10
Schwartz 2	4	¼	1	⅛	H	11	1¾	12	1¼	36⅝	2	F	11¾	3¼	¼	4	11¾	3¼	¼	4	131	81	233	33¼	9
Schwartz 3	4	¼	1¼	⅛	H	11	2	19	1¼	38⅝	2	F	13⅛	3½	¼	4	13⅛	3½	¼	4	166	98	270½	33¼	9½
Schwartz 4	4	¼	1¼	⅛	H	11	2	19	1¼	38⅝	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	163	105	270½	38	8½
Schwartz 5	4	¼	1½	⅛	H	12	2	18	1½	41	2	F	18	4	¼	4	18	4	¼	4	206½	115	318	38	8
Schwartz 5–7	4	¼	1½	⅛	H	12	2	18	1½	41	2	F	18	4	¼	4	18	4	¼	4	130½	91	242	38	10
Selden 30C	4	¼	1	1⅛	V	6	1½	11½	1½	39¼	1½	F	11⅛	3¼	¼	4	11⅛	3¼	¼	4	114	71	198½	34	.....
Selden 50B	4	¼	1	1⅛	V	8⅜	1½	14⅜	1½	40⅝	2	F	13	3½	¼	4	13	3½	¼	4	136	82	227¾	34	.....
Selden 52	4	¼	1¼	1⅛	V	8⅜	1½	16¼	1½	40⅝	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	240	161	295	52	.....
Selden 53B	4	¼	1¼	1⅛	V	11½	1½	16¼	1½	40⅝	2	F	13	3½	¼	4	13	3½	¼	4	136	82	244	34	.....
Selden 70B	4	¼	1¼	1⅛	V	8⅜	1½	16¼	1½	40⅝	2	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	155	91	253	37½	.....
Selden 73B	4	¼	.....	.....	V	9	1¾	14¾	1½	40⅝	2	F	.....	.....	.....	.....	.....	.....	.....	.....	155	91	.....	.....	.....
Selden 90B	4	¼	1½	1⅛	V	7	1¾	16¾	1½	40⅝	2	F	17⅛	4	¼	4	17⅛	4	¼	4	153	89	256	37½	.....
Service 25	3	⅛	1	1⅛	V	12½	1¾	13	1¼	38	⅝	V	19⅜	1¾	⅛	4	19⅜	1¾	⅛	4	106¾	65¾	190	32	9½
Service 33	4	¼	1	.....	V	8	1¾	10	1¼	38	⅝	V	.....	.....	.....	.....	.....	.....	.....	.....	121	76¾	216	34	10½
Service 42	4	¼	1½	.....	V	10	2	10	1½	38	⅝	V	11⅛	3¼	¼	4	11⅛	3¼	¼	4	117¾	81¾	216	34	10¾
Service 61	4	¼	1½	.....	V	10	2	10	1½	38	⅝	V	13	3½	¼	4	13	3½	¼	4	127¾	92¼	226	34	10
Service 81	4	¼	1¼	.....	V	10	2	10	1½	40¾	⅝	V	15⅛	3¾	¼	4	15⅛	3¾	¼	4	144	100½	245	38	8⅛
Service 103	4	¼	1¼	.....	V	10	2	11½	1½	40¾	⅝	V	17¾	4	¼	4	17¾	4	¼	4	144	100¾	245	38	10
Signal NF–1	4	¼	1⅛	1⅛	V	7¾	1½	12	1½	39¾	1¼	F	11	3	¼	4	11	3	¼	4	112	.....	.....	34	.....
Signal H 1½	4	¼	1⅛	1⅛	V	8	1½	9	1¼	30½	1¼	F	11¾	3½	¼	4	11¾	3½	¼	4	120	.....	.....	34	.....
Signal J–2½	3	⅛	1⅛	1⅛	V	10	1½	12	1¼	30½	1¼	F	13⅜	3½	¼	4	13⅜	3½	¼	4	126	.....	.....	34	.....
Signal M 3½	3	⅛	1⅛	1⅛	V	5½	1½	12	1¼	34¼	1¼	F	15¾	3¾	¼	4	15¾	3¾	¼	4	168	.....	.....	38	.....
Signal R–5	3	¼	1	1⅛	V	8	2	16	2	41	2	F	18⅞	4	¼	4	18⅞	4	¼	4	172	.....	.....	.....	.....
Standard 75–1¼	3	⅛	1	1⅛	H	10½	2⅛	14¾	1⅛	39⅛	1⅛	F	11⅜	2½	¼	4	11¾	2½	¼	4	108	62½	198	32	9⅜
Standard 1½K–1–1½	3	⅛	1	1⅛	V	10½	2⅛	14¾	1⅛	39¼	1⅛	F	10⅞	3	¼	4	10⅞	3	¼	4	120	72½	210	32	9⅛
Standard 2½K–2½–3	3	⅛	1¼	1⅛	V	10	1⅛	16	1⅛	41½	1⅛	F	13⅛	3½	¼	4	13⅛	3½	¼	4	132	83	220⅜	32	12
Standard 3½K–3½–5	3	⅛	1¼	1⅛	V	10	1⅛	16	1⅛	42¼	1¼	F	15⅝	3¾	¼	4	15⅝	3¾	¼	4	144	93¾	240	38	9½
Standard 5K–5–7	3	¼	1½	1⅛	V	8	1⅛	3½	1⅛	38	1½	F	17⅛	4	¼	4	17	4	¼	4	144	93¾	244½	38	9
Sterling 1½	3	¼	1¼	¼	V	10	1½	19	1½	38	1½	F	11¼	3¼	¼	4	11¼	3¼	¼	4	120	70	216	33½	.....

Replacement Table—Continued

NAME, MODEL AND TONNAGE	ENGINE												BRAKE LINING								FRAME				
	Piston Rings		Carburetor			Upper Hose		Lower Hose		Fan Belt			Service				Emergency				Length			Width	
	No. per Cyl.	Width	Outlet Diameter	Inlet Diameter	Vertical or Horizontal	Length	Width	Length	Width	Length	Width	Type	Length	Width	Thickness	No. of Pieces	Length	Width	Thickness	No. of Pieces	Back of Driver's Seat	Driver's Seat to Center of Rear Axle	Over All	Over All	Clearance at Lowest Point of Chassis
Sterling 2	3	¼	1¼	¼	V	10	1½	19	1½	38	1½	F	13⅜	3½	¼	4	13⅜	3½	¼	4	120	70	216	33½	.....
Sterling 2½	3	¼	1¼	¼	V	10	1½	19	1½	38	1½	F	13⅜	3½	¼	4	13⅜	3½	¼	4	138	84	234	34	.....
Sterling 3½	3	¼	1½	¼	V	13½	1½	22	1½	40½	1½	F	15¾	3¾	¼	4	15¾	3¾	¼	4	144	85	245	38	.....
Sterling 5-Worm	3	¼	1½	¼	V	10	1½	19	1½	40½	1½	F	17	4	¼	4	17	4	¼	4	158	91	259	38	.....
Sterling 5-Chain E.H.D.	3	¼	1½	¼	V	10	1½	19	1½	40½	1½	F	56½	3½	¼	2	29	4	¼	1	158	97	259	38	.....
Sterling 5-Ch. E. L. D.	3	¼	1½	¼	V	13½	1½	22	1½	40½	1½	F	56½	3½	¼	2	29	4	¼	1	158	97	259	38	.....
Sterling 7½	3	¼	1½	¼	V	10	1½	19	1½	40½	1½	F	56½	3½	¼	2	29	4	¼	1	158	97	259	38	.....
Stewart M15–1¼	3	⅛	.....	1	.....	.....	.....	.....	.....	.....	.....	...	41⅜	2	⅛	2	22¾	2	⅛	1	99½	.....	.....	38	.....
Stewart M9–1½	3	⅛	.....	1	.....	.....	.....	.....	.....	.....	.....	...	48½	2	⅛	2	8	5	⅛	2	119¾	.....	.....	32	.....
Stewart M7X	3	¼	.....	1¼	.....	.....	.....	.....	.....	.....	.....	...	50⅝	2	⅛	2	8	5	⅛	2	132¾	.....	.....	32	.....
Stewart M10X	3	¼	.....	1⅝	.....	.....	.....	.....	.....	.....	.....	...	60	3	⅛	2	8	5	⅛	2	138	.....	.....	32	.....
Stoughton C–¾	3	⅛	1	1⅝	V	14	2½	14	2½	33	1½	F	56½	2½	⅛	2	55	2¼	⅛	2	92½	57	182	34	10½
Stoughton BJ–1½	3	⅛	1¼	1⅝	V	13½	1¾	12½	1¼	40	2	F	56½	2½	⅛	2	55	2¼	⅛	2	107	67	200	34	.....
Stoughton B–1½	4	¼	1	1⅝	V	18	1¼	15	1¼	39¼	1½	F	19	2	¼	4	19	2	¼	4	116	66	210	34	11
Stoughton D–2	3	¼	1¼	1⅝	V	9	1½	14	1¼	44	2	F	23	2¼	¼	4	23	2¼	¼	4	116	70	210	34	9¾
Stoughton F–3	3	¼	1¼	1⅝	V	10	2	15	1¼	44	2	F	23	2¼	¼	4	23	2¼	¼	4	127	82	222	36	9¾
Super Truck 50	3	¼	1¼	1	V	19	1¾	19	1½	37½	1⅞	F	51½	2¼	¼	2	51½	1¼	¼	2	135	.....	.....	36	.....
Super Truck 70	3	¼	1¼	1	V	19½	1¾	19	1½	37½	1⅞	F	55½	2½	¼	2	55½	2¼	¼	2	144	.....	.....	34	.....
Super Truck 100	3	¼	1½	1	V	6	1¾	19	1¾	42	1⅞	F	68	3	¼	2	51½	3	¼	2	144	.....	.....	34	.....
Traffic C–4000	3	⅛	1	⅛	H	10½	2	10½	2	41¼	1¼	F	43½	2½	⅛	2	38	1¾	⅛	2	120¾	67¾	213⅜	42	10¼
Traffic 6000	3	⅛	1	⅛	H	10½	2	10½	2	41¼	1¼	F	52	3	⅛	2	47	2	⅛	2	120¾	69¾	213⅜	34	11¼
Traffic Speedboy	3	⅛	1	⅛	H	10½	2	10½	2	41¼	1¼	F	43½	2½	⅛	2	38	1¾	⅛	2	86	53⅞	174	34	11¼
Transport 15–1	3	⅛	1	1	H	10¾	2	13	2	40⅜	1¼	F	48	2½	⅛	2	46⅝	2¼	⅛	2	98½	57⅜	188	34	10
Transport 26–1½	4	⅛	1	1	V	9¼	2	13	1¼	34⅛	1¾	F	48½	2	⅛	2	46½	1½	⅛	2	113⅞	70¼	201	34	10
Transport 36–2	4	¼	1	1	V	10¾	2	16	1¼	33½	2	F	10¼	3½	¼	2	46½	1½	¼	2	120¼	72¾	210	34	11
Transport 61–3½	4	¼	1¼	1¼	V	9¼	2	16	1¼	33½	2	F	11⅛	3	⅛	4	48½	2½	⅛	2	127⅜	78⅛	218	34	11
Transport 75–5	4	¼	1¼	1¼	V	12	2	16	1¼	35⅞	2	F	11⅛	3	⅛	4	58	2½	⅛	2	150½	93⅛	251½	36½	10½
Transport 55–3	3	¼	1¼	1¼	V	9	1½	16	1¼	31½	1¼	F	11⅞	3	⅛	4	48½	2½	⅛	2	123⅛	78⅛	213¾	34	11
Traylor B	4	¼	1	.....	V	.....	.....	.....	.....	38	1	F	50	2	¼	2	50	2	¼	2	117	75	204¾	34	10
Traylor C	4	¼	1¼	.....	V	.....	.....	.....	.....	36	2	F	50	2	¼	2	50	2	¼	2	122	73½	218¾	34	10½
Traylor D	4	¼	1¼	.....	V	.....	.....	.....	.....	36	2	F	56½	2¼	¼	2	56½	2¼	¼	2	142	76	241½	34	9¾
Traylor F	4	¼	1¼	.....	V	.....	.....	.....	.....	37	2	F	59	2½	...	2	59	2½	...	2	165	92½	273¼	35	11
Triangle AA–1	3	⅛	1	1	H	17	2	17	2	34	1	F	22½	1¼	⅛	4	48	2½	⅛	2	94	53	177	35	10
Triangle A–1½	4	¼	1	1	V	14	1¼	14½	1¼	39¼	1½	F	7½	4	⅛	2	49	2	⅛	2	126	77½	225	34	12
Triangle B 2½	3	¼	1¼	1¼	V	9	1½	18	1¼	39¼	1½	F	7½	4	⅛	2	52	3	⅛	2	132	84½	217½	34	9
Triangle C–2	3	¼	1	1	V	14	1¼	14½	1¼	39¼	1½	F	7½	4	⅛	2	52	3	⅛	2	129	81	219⅞	34	12
Ultimate A–2	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	20	2¼	¼	2	45	2	¼	2	126	.....	.....	32¾	.....
Ultimate AJ2	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	20	2¼	¼	2	45	2	¼	2	126	.....	.....	32¾	.....
Ultimate AJL–2	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	20	2¼	¼	2	45	2	¼	2	150	.....	.....	32¾	.....
Ultimate AJXL	4	¼	1¼	1⅝	V	12	2	8	1¼	34	2	F	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ultimate B–3	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	51	2½	¼	2	51	2¼	¼	2	144	.....	.....	32¾	.....
Ultimate BL3	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	51	2¼	¼	2	51	2¼	¼	2	192	.....	.....	32¾	.....
Ultimate D–5	4	¼	1¼	1⅝	V	11	2	8	1¼	34	2	F	51	2¼	¼	2	51	2¼	¼	2	180	.....	.....	37½	.....
Union FW–2½	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	26	4½	¼	1	52	3	¼	1	133½	77¼	224	32	11½
Union H–4	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	56¾	3½	¼	1	32	4½	¼	1	157½	.....	.....	34	.....
Union HW–4	3	¼	1¼	1¼	V	20	1¾	19½	1½	37¾	2	F	26	4¼	¼	1	24	4	¼	2	157½	98	264	34	13½
United H Spec	4	¼	1	1	H	16	2	19	2	32	1¼	F	49	2½	¼	2	49	2½	¼	2	.....	.....	.....	.....	.....
United 30, 35, 50	3	¼	1¼	1¼	H	7	1¾	13	1¼	34	1½	F	49	2½	¼	2	49	2½	¼	2	.....	.....	.....	.....	.....
United C	4	¼	1¼	1	H	7	2½	7	2½	37¼	2	F	62	3	¼	1	58	2½	¼	1	.....	.....	.....	.....	.....
United 1½	4	¼	1	1	H	15	2½	16	1½	37½	2	F	48	2	¼	1	48	1½	¼	1	120	.....	.....	33	.....
United 2½	4	¼	1¼	1	H	7	2½	12	1½	37½	2	F	49	3	¼	1	49	2½	¼	1	Opt	.....	.....	33	.....
United 3½	4	¼	1¼	1	H	7	2½	7	1½	37½	2	F	62	3	¼	1	58	2½	¼	1	Opt	.....	.....	34	.....
U.S.U.–1¼	4	⅛	1	⅛	V	11½	1¾	11½	1¼	33	1¼	F	50½	2½	⅛	2	20	1½	⅛	4	108	70	195	32	9¾
U.S.N.–1½	3	M	1	⅛	H	11½	2	9	1¼	37	1¼	F	50½	2½	⅛	2	46½	1½	⅛	4	120	82	211	34	11
U.S.N.W.–23–1½–2	4	⅛	1	⅛	H	10¾	1¾	11½	1¼	33	1¼	F	21	2¼	¼	4	21	2¼	¼	4	120	82	211	34	11
U.S.R.–2½–3	3	⅛	1¼	⅛	V	10	1¼	10	1¼	35	1¼	F	21	2¼	¼	4	21	2¼	¼	4	144	94	241	34	9¾
U.S.S.–3½–4	3	¼	1½	¼	V	9	1½	8	1½	37	1¼	F	21	4	¼	4	21	3	¼	4	156	104	258	36	9
U.S.T. 5–7	4	¼	1½	¼	V	15	2	13	1½	38¾	2	F	62	3	¼	4	33	4	¼	1	168	103	278	36	10½
U.S.S.Spec. 4–5	3	¼	1¼	¼	V	9	1½	8	1½	37	1¼	F	21	4	¼	4	21	3	¼	4	156	.....	.....	36	.....
Vim 50–½–¾	3	.....	1	.....	.....	.....	.....	.....	.....	33⅛	.....	F	48	.....	.....	2	46⅝	.....	.....	2	.....	.....	160	.....	.....
Walker 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	45½	2½	⅛	2	16	2	⅛	4	90	.....	.....	32	.....
Walker P3½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	53¼	3	½	2	19¼	2½	¼	4	140	.....	.....	35	.....
Walker N5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	53¼	3	¼	2	19¼	2½	¼	4	162	.....	.....	35	.....
Walker 22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	45½	2½	⅛	2	16	2	⅛	4	99	.....	.....	32	.....
Walker 42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	...	53¼	3	¼	2	19¼	2½	¼	4	120	.....	.....	32	.....
Walker Johnson A–2	3	⅛	1	1	V	11½	2	7½	1¾	37	1	F	12	3¼	¼	4	12	3¼	¼	4	117	.....	.....	32	.....
Walker Johnson B3	4	¼	1¼	1¼	V	10	2	8	1¼	33½	1¼	F	13	3½	¼	4	13	3½	¼	4	133	.....	.....	32	.....
Walter 8–5	3	¼	½	2	V	10	1½	18	1½	39	1½	F	15	5	¼	4	57	2½	¼	2	150	.....	.....	36	.....
Ward LaFr'e 2B–2½–3½	3	¼	1¼	1½	V	7	1½	16	1½	41½	1½	F	13	3½	¼	4	13	3½	¼	4	137½	.....	.....	33	.....
Ward LaFrance 4A–3½–5	3	¼	1¾	1¾	V	8½	1½	18	1½	41½	1½	F	15½	3¾	¼	4	15½	3¾	¼	4	170⅛	.....	.....	37	.....
Ward LaFrance 5A–5–7	3	¼	1½	1¾	V	9¼	1½	18	1½	41½	1½	F	18	4	¼	4	18	4	¼	4	170⅛	.....	.....	37	.....
White 15A–Taxi	3	¼	1	1	V	7¼	1	6½	1¼	38	1¼	F	46	2½	⅛	2	41⅛	2½	⅛	2	55¼	43½	149¼	34	9¼
White 15–¾	3	¼	1	1	V	7¼	1	6½	1¼	38	1¼	F	46	2½	⅛	2	41⅛	2½	⅛	2	85½	58	179	34	10½
White 15–45–¾	3	¼	1	2	V	13½	1½	12	1½	40⅝	2	F	53⅞	2½	⅛	2	50⅞	2½	⅛	2	85⅜	57⅞	189	34	10½
White 20–2	3	¼	1	1	V	7¼	1	7¼	1¼	38	1¼	F	55½	3½	¼	2	50⅞	3½	¼	2	146	92½	239½	34	9
White 20–D–2	3	¼	1	1	V	7¼	1	7¼	1¼	38	1¼	F	55½	3½	¼	2	50⅞	3½	¼	2	98	70	191½	34	9
White 20–45–2	3	¼	1	2	V	13½	1½	12	1½	40⅝	2	F	11⅜	5	⅛	4	50⅞	3½	⅛	2	107½	82	214¼	34	9
White 50–Bus	3	¼	1	2	V	13½	1½	12	1½	45¾	2	F	11⅜	5	⅛	4	50⅞	3½	⅛	2	168	112	274¾	74	9
White 40–3½	3	¼	1	2	V	13½	1½	12	1½	45¾	2	F	11⅜	5	⅛	4	25⅞	5	⅛	4	164	106½	267½	42½	13
White 40–D–3½	3	¼	1	2	V	13½	1½	12	1½	45¾	2	F	11⅜	5	⅛	4	25⅞	5	⅛	4	118	88½	222½	42½	13
White 45–5	3	¼	1	2	V	13½	1½	12	1½	45¾	2	F	11⅜	5	⅛	4	25⅞	5	⅛	4	164	106½	267½	42½	13
White 45–D–5	3	¼	1	2	V	13½	1½	12	1½	45¾	2	F	11⅜	5	⅛	4	25⅞	5	⅛	4	119	88½	222½	42½	13
Wilcox AA–1	3	¼	1	.....	.....	.....	.....	.....	.....	.....	.....	...	47	2½	⅛	2	33¼	2½	⅛	2	96	.....	.....	34	.....
Wilcox B–1½	3	¼	1¼	.....	.....	.....	.....	.....	.....	.....	.....	...	47	2½	⅛	2	33¼	2½	⅛	2	132	.....	.....	33	.....
Wilcox C–2½	3	¼	1¼	.....	.....	.....	.....	.....	.....	.....	.....	...	57½	2½	⅛	2	42½	2½	⅛	2	141	.....	.....	33	.....
Wilcox E–3½	3	¼	1¼	.....	.....	.....	.....	.....	.....	.....	.....	...	57½	2½	¼	2	42½	2½	¼	2	156	.....	.....	33	.....
Wilcox F–5	3	¼	1½	.....	.....	.....	.....	.....	.....	.....	.....	...	69⅜	3½	¼	2	52	3½	¼	2	148½	.....	.....	36	.....
Wichita K–1	3	¼	1½	1⅜	V	18½	1¼	12	1¼	52¾	1½	F	19½	2	¼	4	19½	2	¼	4	127½	.....	.....	32	.....
Wichita M–2	3	¼	1½	1⅜	V	18½	1¼	12	1¼	52¾	1½	F	49	2	¼	2	49	2	¼	2	126½	.....	.....	30	.....
Wichita R–2½	3	¼	1½	1⅜	V	18½	1¼	12	1¼	52¾	1½	F	54	2¼	¼	2	54	2¼	¼	2	126½	.....	.....	30	.....
Wichita RX–2½	3	¼	1¼	1⅜	V	11	1½	11	1½	40	1½	F	54	2¼	¼	2	54	2¼	¼	2	130	.....	.....	30	.....
Wichita O–3½	3	¼	1½	1⅜	V	11	1½	11	1½	40	1½	F	56½	2½	¼	2	56½	2½	¼	2	152½	.....	.....	30	.....
Wichita S–5	3	¼	1½	1⅜	V	11	1½	11	1½	40	1½	F	66	3	¼	2	66	3	¼	2	163½	.....	.....	36	.....
Wisconsin 2 (Loganville)	3	⅛	1¼	1¼	H	17	2	17	2	34	¾	F	58	2½	⅛	2	56½	2¼	⅛	2	114	.....	.....	34	.....
Wisconsin 2½ (Loganville)	3	⅛	1¼	1¼	V	12	1½	10	1¼	40	¾	V	58	2½	⅛	2	56½	2¼	⅛	2	120	.....	.....	32	.....
Witt-Will P–2	3	⅛	1¼	1¼	V	8	1½	12	1¼	31	1¼	F	48	3¼	¼	4	48	3¼	¼	4	.....	78	223	32	10
Witt-Will S–3	3	⅛	1¼	1¼	V	8	1½	12	1¼	41	1½	F	52	3½	¼	4	52	3½	¼	4	156	108	242	32	10
Witt-Will N–1½	3	⅛	1¼	1¼	V	8	1½	12	1¼	31	1¼	F	48	3¼	¼	4	48	3¼	¼	4	137	78	226	32	10
Witt-Will S–2½	3	⅛	1¼	1¼	V	8	1½	12	1¼	41	1½	F	52	3½	¼	4	52	3½	¼	4	137	78	226	32	10
Yellow Cab M22—¾	3	⅛	1	1½	V	8¼	2	10⅛	2	38½	¾	V	49	2½	¼	2	45	2½	¼	2	60	.....	.....	43	.....
Yellow Cab M42–1¼	3	⅛	1	1½	V	8¼	2	10⅛	2	38½	¾	V	21¾	3	¼	4	11	3	¼	2	92	.....	.....	32	.....
Yellow Cab Express	3	⅛	1	1½	V	8¼	2	10⅛	2	38½	¾	V	21¾	2½	¼	4	11	2½	¼	2	88	55	155⅝	34½	.....

KEY OF ABBREVIATIONS

Note: Numerals on This Page Correspond With Numerals at Head of Specification Columns on Page Following. In All Specifications—O, Own; Op or Opt, Optional

Engine:
Beav—Beaver
Buda
Cont—Continental
GBS—Golden, Belknap & Swartz
Gr-B—Gray-Beal
Her—Hercules
Hin—Hinkley
1 H-Sp—Herschell-Spillman
Lib—Liberty
LMF—Light Mfg. & Fdy.
Lyco—Lycoming
Mid—Midwest
Sup—Supreme
Wau—Waukesha
Wei—Weidely
Wis—Wisconsin
Yellow—Yellow

Valve Arrangement:
H—Overhead
2 L—ELL-Head
S—Sleeve
T—TEE-Head

Radiator (Make):
BW—B & W
Brm—Brenem
Bus—Bush
Can—Candler
Cor—Corcoran
Chic—Chicago
Eag—Eagle
EM—English-Mersick
Eur—Eureka
Fed—Fedders
Flex—Flexo
GO—G. & O.
Har—Harrison
Hoo—Hooven
3 Idl—Ideal
Jam—Jamestown
Kue—Kuenz
Liv—Livingston
Lng—Long
McC—McCord
May—Mayo
Mod—Modine
Per—Perfex
R-T—Rome-Turney
SJ—Shotwell Johnson
Spar—Sparton
Spec—Special
Spli—Splitex
Stn—Standard
Whe—Wheeler

Lubrication:
4 FS—Force and Splash
F—Force Feed
S—Splash

Carburetor:
Bent—Bennett
Bris—Briscoe Devices
Cart—Carter
Eag—Eagle
Ens—Ensign
Hol—Holly
John—Johnson
5 King—Kingston
Mar—Marvel
Mas—Master
Mill—Miller
Rayf—Rayfield
Scoe—Scoe
Strm—Stromberg
Sheb—Schebler
Stew—Stewart
Till—Tillotson
Zen—Zenith

Fuel Feed:
6 G—Gravity
P—Pressure
V—Vacuum

Governor:
Con—Continental
Dup—Duplex
Han—Handy
Her—Hercules
7 Hin—Hinkley
McC—McCanna
Mon—Monarch
Phar—Pharo
Pier—Pierce
Sim—Simplex
Wau—Waukesha

Ignition System:
Amr—American Swiss
Apo—Apollo
AtK—Atwater Kent
AuL—Auto-Lite
Ber—Berling
Bos—Bosch
Con—Connecticut
Del—Delco
Eis—Eisemann
Kin—Kingston
8 KW—K. W. Ignition Co.
Lor—Louraine
NE—North East
POL—Prest-O-Lite
Rm—Remy
RBo—Robert Bosch
Sim—Simms
Spl—Splitdorf
Tea—Teagle
Wag—Wagner
Wes—Westinghouse

Engine Starter:
AC—Allis-Chalmers
AK—Atwater Kent
AuL—Auto-Lite
Bj—Bijur
Bos—Bosch
Del—Delco
Dy—Dyneto
9 GD—Gray & Davis
LN—Leece-Neville
NE—North East
Rm—Remy
Sim—Simms
USL—U. S. L.
Wes—Westinghouse
Wg—Wagner

Clutch (Make):
B.B—Borg & Beck
B-Li—Brown-Lipe
Covt—Covert
Det—Detlaff
DG—Detroit Gear & Mach.
Dod—Dodge
Full—Fuller
10 Hart—Hartford
Hoos—Hoosier
HS—Hele-Shaw
M-E—Merchant & Evans
Mun—Muncie
T-D—Twin Disc
W-Gr—Warner Gear

Gearset:
B-Li—Brown-Lipe
Cott—Cotta
Covt—Covert
11 Det—Detroit
Dod—Dodge
Dun—Dundore
Durs—Durston
Full—Fuller
G-Le—Grant Lees
MM—Mechanics Mach. Co.
Mun—Muncie
W-C—Warner Corporation
W-Gr—Warner Gear

Location of Gearset:
A—Amidships
J—Unit with jackshaft
12 R—Rear
U—Unit with engine

Universal:
Acm—Acme
Arv—Arvac
Bld—Blood-Brothers
Det—Detroit
Hart—Hartford
KB—Kinsler-Bennett
MM—Mechanics
M-E—Merchant & Evans
Nor—Norwalk
Pet—Cleveland Universal
13 Pick—Pick
Sned—Snead
Spic—Spicer
Ster—Sterling
Ther—Thermoid
UM—Universal Machine
UP—Universal Products
Var—Varied

Springs:
Am—Am. Auto Parts
Arm—Armstrong
Bea—Beans
Cham—Champion
Del—Delany
Det—Detroit
GC—Garden City
Har—Harvey
IC—Iron City
Kal—Kalamazoo
Lah—Laher
Lig—Liggett
Mar—Maremont
14 Math—Mather
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
P.S.—Point Spring Co.
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
SS—Standard Steel
Ster—Sterling
Tut—Tuthill
US—United States
Vul—Jenkins Vulcan

Front Axle
Col—Columbia
Cont—Continental
Dod—Dodge
Fli—Flint
15 Sals—Salisbury
Sav—Savage
Shel—Sheldon
Shul—Shuler
Stan—Stan-Par
Tim—Timken
Torb—Torbensen
Vul—Vulcan

Final Drive:
B—Bevel Gear
C—Chain
16 I—Internal Gear
P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm

Rear Axle (Make):
Col—Columbia
Clark
Dun—Dunkirk
Eat—Eaton
Fli—Flint
Huck—Huck
IrM—Iron Mt.
LM—L M Axle
17 Russ—Russel
Sals—Salisbury
Shel—Sheldon
Stn—Standard Parts
Thom—Thomson
Tim—Timken
Torb—Torbensen
Vul—Vulcan
Walk—Walker
Wis—Wisconsin

Rear Axle (Type):
F—Floating
D—Dead
18 ½—Semi-Floating
¾—¾-Floating

Steering Gear:
CAS—C. A. S. Products Co.
Dit—Ditwiler
Dod—Dodge
Gem—Gemmer
Hin—Keystone Hindley
Jac—Jacox
19 Lav—Lavine
M-P—Muncie Products
Ros—Ross
Sag—Saginaw Products Co.
Woh—Wohlrab

Wheels:
Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Bet—Bethlehem
Bud—Budd
Cla—Clark
C&M—Crane & McMahon
Day—Dayton
Det—Detroit
Dis—Disteel
E&O—Eberly & Oris
Hay—Hayes
Hoo—Hoopes Brothers
Imp—Imperial
Ind—Indestructible
Jon—Jones
Kel—Kelsey
20 MM—Michigan Malleable Iron Co.
Mot—Motor Wheel
Mun—Muncie Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Royer
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Van—Van Wheel
Wal—Walker
Way—Wayne
W-L—Waterhouse & Lester

Rim Equipment:
Bak—Baker
Cle—Cleveland
Det—Detroit
Fir—Firestone
21 Gdy—Goodyear
Hay—Hayes
Jac—Jackson
Jax—Jaxon
Kel—Kelsey
Mil—Miller

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers. Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

See Preceding Table for Replacement Data. Truck Frame Dimensions Are Included in Same Table

(Where prices are not given it is because we have been unable to get them from authoritative sources)

*This symbol in the wheelbase column indicates that more than one wheelbase is furnished

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual ‡Solid — Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1			2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18			19			20	21		
1000 Pounds																															
Chevrolet, Sup. LD	395	Own	3 11/16x4	21.7		Har	FS	Zen	G		Rm	Rm	Own		U	3	Own	SS		S		½	3.77	12.52	M-P	30x3½	30x3½	Hay	Jax	1390	103
Overland	395	Own	3½x4	19.6	L	Own	FS	Till	G		AuL	AuL	B.B.	Own	U	3	Own	Own	Own	B	Own	½	4.5	17.68	Own	30x3½	30x3½	Hay	Hay	1550	100
1500 Pounds																															
American-LaFrance 1R		Own	4¼x5	28 9	L	Bus	F	Strm	G		Spl	Wes	Own	Own	A	3	Own	Mer	Own	S	Own	½	4.5	20.1	Own	33x5*	33x5*		Fir		139½
Commerce 9		Cont N	3¾x5	22.5	L	Lng	S	Zen	V		Bos	Bj	DG	Det	U	3	UM	Am		B	Sals	¾	5.73	18.33	Jac	33x5	33x5	Mot		3100	127
Corbitt S Speed Truck		H-Sp 30	3½x5	19.8	L	Own	FS	Strm	V		Eis	Dy	B-Li	B-Li 30	U	3	Hart	Shel	Shel 33FA500	W	Shel W1002	½	6	20	Ros	34x4½*	34x4½*	Bim	Fir	3420	130
Diamond T75		Her	4 x5	25.6	L	GO	F	Zen	G		Apo		Covt	Covt JUC	U	3	Spic	Math	Col 5000	B	Col 52000	¾	5.12	18.58	Gem	33x5*	33x5*		Fir	2825	130
Dodge Brothers	730	Own	3 7/8x4½	24	L	McC	FS	Stew	V		NE	NE	Own	Own	U	3	Own	Own	Own	S	Own	½	4.54	18.9	Own	32x4*	32x4*	Kel	Kel		116
King Zeitler	1650	Cont N	3¾x5	22.5	L	Chic	F	Zen	G	Phar	Bos	Bos	B-Li	B-Li 30	U	3	Pick	Mar	Tim 1216C	B	Tim 5311	½	4.9	20.04	Gem	33x5*	33x6*	Bim	Fir	2900	124
Perfection A	1245	Cont N	3½x5	19.6	L	Own	FS	Zen	V		Rm	Rm	B.B.	Own AAU	U	3	Ther	Own	Tim 1216-B	B	Tim 5311	½	5	22.3	Lav	32x4½	32x4½	Bim	Mil	2500	128
Rainier R-31	1970	Cont N	3¾x5	22.5	L	Har	FS	Zen	V	Mon	Eis		B-Li	B-Li 30	U	3	Hart	Per	Tim 1250	W	Tim 6250	½	6.75	22.5	Lav	35x5*	35x5*	Jon	Fir	2500	125
Ruggles 15	895	H-Sp. 30	3½x5	19.6	L	Per	FS	Zen	G		Bos	Bos	M-E	Full J	U	3	Spic	Det	Col 3000	B	Col 30000	¾	5.81	19.7	Jac	32x4½	32x4½	Nor	Fir	2300	122
Service 12		Mid 409	3¼x4½	16.9	H	Lng	F	Strm	G		Rm	Rm	Hoos	Det DY 208	U	3	M-E	Shel	Own E-1-558	B	Tim 5311	½	6.88	22.1	Ros	32x4½*	32x4½*	Bim	Fir	2720	128
Stoughton C	1175				H	Chic	F	Zen	V		Rm	Rm	Det	Own D-21	U	3	Ther	Own	Col 5058	S	Col 52003	¾	5.87	20	Ros	34x4½*	34x4½*	Bim	Gdy	2480	131
Vim 50	995	Own	4 x5	25.6	L	McC	F	Zen	G		Wes	Wes	Own	Own	U	3	MM	Shel	Own	B	Own		4.7		Own	32x4*	32x4*		Fir	2600	108
White 15	2400	Own GK	3¾x5½	22.5	L		FS	Zen	G				Own	Own TBC	A	4			Own	B	Own	½	5.36	18.6	Own	34x5*	34x5*		Fir	3225	133
Yellow Cab..M-22-¾	1590	Cont V-4	3¾x5	22.5	L	Lng	FS	Zen	G		Bos		B-Li		U	3	Spic	Math		B			4.9	16.31	Gem	33x4½*	33x4½*	Stn	Fir	2400	117
1 Ton																															
Acme 20		Cont N	3¾x5	22.5	L	GO	FS	Rayf	V	Dup	Eis	Bos	B.B.	Cott AAU	U	3	Bld	Det	Tim 1250	W	Tim 6250	½	6.75	27	Ros	35x5*	35x5*	Bim		3050	129
Autocar F	2200	Own 2	4¾x4½	18	L	Own	S	Strm	G				Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo		3800	97
Autocar G	2300	Own 2	4¾x4½	18	L	Own	S	Strm	G				Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo		3900	120
Avery		Own 6	3 x4	21.6	L	Own	S	Strm	V	Own	KW	Wis	Own	Own	U	3	Pet	Math	Own	I	Own 2-L	D	8	26.66	Ros	34x5*	34x5*	StM	Gdy	2800	129
Belmont B	1525	Buda MU	3 5/16x5 5/16	21	L	R-T	F	Zen	V		Con	Dy	Full	Full	U	3	M-E	Math	Shel 510	B	Torb A	½	5.42	15.25	Lav	35x5*	35x5*	Sim	Fir	2000	113
Bessemer G	1450	Cont N	3½x5	19.6	L	Stn	FS	Strm	G		Bos	B	Full	Full TU¾	U	3	Bld	Per	Shel 350	I	Torb A	D			Ros	35x5	35x5	Sch	Fir	3000	124
Bethlehem KN	1385	Own	3½x5	19.6	L	GO	F	Zen	V		Bos	GD	B.B.	Det Dy	U	3	Spic	Math	Stan 3070F	B	Eat 1000	½	6.86	18.8	Lav	35x5	35x5		Fir	2650	125
Bets J-3	1850	J-3	3¾x5½	22.3	L	Chic	F	Zen	G	Mon	Bos	Bos	B-Li	B-Li 30	U	3	Pet	Mar	Tim 1250	W	Tim 6352	½			Ros	34x5	34x5		Fir	3150	140
Brockway E		Wis SU	4 x5	25.6	H	GO	F	Zen	V		Bos	LN	B-Li	B-Li 30	U	3	M-E	Row	Col 5045	S	Col 52001	F	5.13	20.5	Gem	33x5*	33x5*		Fir	3450	135
Casco Model A	1785	Buda WTU	3¾x5½	22.4	L	GO	F	Zen	V		Bos	Bos	Full	Full SUI	U	3	Spic	Stan	Col 5000	S	Col 52000	½	5.85	23.46	Woh	34x5	34x5	Arc	Fir	3100	130
Chevrolet Sup.Util.Exp.	495	Own	3 11/16x4	21.7	H	Har	FS	Zen	G		Rm	Rm	Own			3	Own	SS		S		½	5.42	18	M-P	31x4*	34x4½*	Hay	Jax	2840	125
Concord E		Buda FTU	3¾x5¼	22.5	L	Own			V		Eis	Wes	B-Li	B-Li	U			Spic		W	Tim		6.2			34x5	36x6			3500	135
Diehl A		Cont N	3½x5	19.6	L		FS	Zen	G		Sim		B.B.	Durs O2800		3	KB	Mar	Sals 1455E	I	Torb OX2L	D	5.3		Ros	34x4½*	35x5*	Sch	Fir	2400	115
D-Olt A-1	1695	Mid 408	3½x5	19.6	L		FS	Zen	V	Opt	RBc		B-Li	B-Li 30	U	3	Spic	SP	Tim 1250	W	Tim 6250	½	6.75	22	Ros	35x5	35x5	Day	Fir	3400	138
Dorris K-2	2490	Own	4 x5½	25.6	H	Mod	F	Strm	V		Bos	Wes	Own	W-Gr	U	3	Spic	Row	Tim 1250	B	Tim 5542	½	4.23	15.65	Ros	33x5	33x5	Mun		2000	Op
Duplex D		Buda WTU	3¾x5⅜	22.5	L	Mod	F	Zen	V		Wes	Wes	B-Li	B-Li	U	3	Pet	Pen		B	Tim	½	5.5	22	Woh	33x5*	33x5	Mot	Fir	3000	132
Federal R-2		Cont J-4	3¾x5	22.5	L	Own	F	Zen	V		Eis	Rm	B.B.	Det	U	3	Pet		Tim 1250	W	Tim 6250	½	5.6	17.4	Gem	33x5	33x5†			2950	132
Ford T	380	Own	3¾x4	22.5	L	Own	S		G		Own		Own	Own	U	2	Own	Own	Own	W	Own	½	Op	19.9	Own	30x3½*	32x4½			1520	124
Fulton A	1495	H-Sp 7000	3½x5	19.6	L	Liv	FS	Cart	G		Sim	Wis	B.B.	Durs O2500B	U	3	Spic	Row	Col 5038	B	Col 51002		6.8		Lav	35x5	35x5	Hoo	Fir	2800	130
Garford 15	1590	Buda MU	3 5/16x5 1/8	21	L	Lng	F	Strm	G		AtK	AtK		Own	U	3	Spic	Per	Own	W	Stn	½	6.5		Gem	34x5*	34x5*		Fir	3500	132
Gary F	1775	Buda WU	3¾x5⅜	22.5	L	Chic	FS	Zen	V	Pier	Eis		Full	Full	U	3	Bld	Det	Tim 1452	W	Tim 6352	½	8.25	24.75	Ros	36x3½	36x4	Pru	Gdy	3400	130
G.M.C. K-16		Own	3½x5½	19.6	L	Own	F	Mar	G	Own	Sim	Own	Own	Own	U	3	UM	Det	Own	B	Own	¾	6	21.9	Own	34x5*	34x5*	Kel		3250	132
Graham Brothers BA	1265	Dodge	3½x4½	24	L	McC	FS	Stew	V		NE	NE	Dod	Dod	U	3	UP	Det	Dod	S	Own B-360	½	6.28	29.29	Dod	33x4½*	34x5*			2835	140
Gramm-Pioneer 10-SpT	1365	Lyco CT	3¾x5	22.5	L	Own	F	Zen	G		Con	AuL	Mun		U	3	Own	Per	Sals	B	Sals 1483	¾	5.75	23	Ros	33x5*	33x5*	Day	Fir	2370	129
Gray			3 5/8x4	21	L	Cor	FS	Bris	G		Wes	Wes	Own	Det	U	3	Sned	Det	Tim O-100	B	Tim 513	½	6.13	19.2	Own	30x3½*	32x4½*	Kel	Kel	1510	
Hawkeye	1550	Buda WTU	3¾x5½	22.5	L		F	Zen	G		Eis		Full		U	3		Det		B	Clark	D	6.25	18.75	Ros	34x5*	34x5*	Day	Fir	3250	136
Independent B (Iowa)	1665	Cont N	3½x5	19.6	L	GC	FS	Strm	V		Bos		Full		U	3	Bld	GC		D					Lav	34x3	34x4	StM	Fir	3480	135
Indiana Highway Exp		Wau BUX	3¾x5¼	22.5	L	MeC	F	Zen	G		Bos	Bos	B.B.	B-Li 30	U	3	Pet	Shel	Tim 1250	B	Tim 5511	½	6.11	24.9	Ros	34x5*	34x5*		Fir	3200	130
Int'n'l Speed Truck S		Lyco-Int'l	3½x5	19.6	L	Lng	FS	Ens	G		Con	AuL	Mun		U	3	Sned	Stan		I		D	6.3	25.2	CAS			Opt		2750	124
International 21		Own	3½x5¼	19.6	L	Own	FS	Ens	G	Own	Bos	Own	Own		A	3	Own			I		D	7	23.5	Own			Own		3030	115
Kearns H	1150	H-Sp 7000	3½x5	19.6	L	Own	FS	Zen	V		Bos	Dy	B.B.		U	3	M-E	Shel		I			5.3	24	Lav	32x4½*	32x4½*	Sch	Fir	2000	118

King Zeitler	1950	Cont N	3¾x5	22.5	L	Chic	F	Zen	G	Phar	Eis	Bos	B-Li	B-Li 30	U	3	Pick	Mar	Tim 1452	W	Tim 6352	½	7.2	29.44	Gem	34x4	34x5	Bim	Fir	3750	134
Luedinghaus C	1695	H-Sp 7000	3½x5	19.6	L	Own	FS	Sheb	G	.....	Wes	Wes	B.B.	.....	U	3	Spic	Tut	.....	S	.....	½	6.2	18.32	Lav	35x5*	35x5*	StM	.....	2850	130
Menominee Hurryton	1650	Wis SU	4 x5	25.6	H	Own	F	Strm	V	.....	Eis	Bos	B.B.	.....	U	3	Spic	Per	Col 52000	S	.....	½	4.58	18.3	Lav	34x5	34x5	Stn	Fir	3500	132
Moreland R-R	1800	Her-O	4 x5	25.6	L	Own	F	Zen	G	.....	AuL	AuL	B-Li	B-Li 30	U	3	Pet	US	Tim 1250	B	Tim 5512	½	5.5	22	Ros	34x5	34x5	.....	Fir	3335	132
Moreland RC–Bus	2280	Her-O	4 x5	25.6	L	Own	F	Zen	G	.....	AuL	AuL	B-Li	B-Li 30	U	3	Pet	US	Tim 1250	B	Tim 5512	½	5.5	22	Ros	32x6	32x6	Own	Gdy	3850	180
Nash 2018	1595	Own 4	3¾x5½	22.5	L	.....	F	Strm	G	Sim	Eis	AuL	B.B.	Det C	U	3	Own	Har	Cwn	I	Clark 10	½	6.8	21.85	Lav	34x4	34x5	AuW	.....	3400	130
Nelson-LeMoon G-1	....	Cont J-4	3¾x5	22.5	L	Chic	F	Strm	G	.....	Bos	Bos	Full	Full LTU 5	U	3	Own	GC	Tim 1250	W	Tim 6250	½	6.25	.....	Ros	34x5*	34x5*	StM	Fir	2700	151
Ogden A2	....	Cont N	3½x5	22.5	L	Chic	S	Zen	V	.....	Spl	.....	B-Li	B-Li 30	U	3	Pick	Tut	Tim 1250	W	Tim 6250	½	5.6	18.6	Ros	34x5	34x5	Stn	Fir	2700	125
Oldsmobile	1095	Own	3 11/16x5¼	21.7	H	Har	FS	Zen	V	.....	Rm	AuL	B.B.	W-Gr	U	3	Spic	Per	Torb 25	I	Torb OX2L	D	6.5	22.8	Jac	35x5*	35x5*	AuW	Jax	2580	128
Parker B-23	1400	Buda WTU	3¾x5⅛	22.5	L	Own	F	Zen	V	.....	Wes	Wes	Full	Full SU-2	U	3	Bld	Tut	Fli 72 BA 10	B	Fli 72 BA 80	F	5.5	22	Lav	33x5*	33x5*	Bim	.....	2700	131
Patriot 7R	1350	Cont N	3¾x5	22.5	L	Mod	FS	Strm	V	.....	AtK	Bj	B.B.	Covt MA	A	3	Ther	Mar	Fli 50B	W	Tim 6250	½	6.25	22.69	CAS	35x5	35x5	Bim	.....	2900	128
Pioneer AA (Chicago)	1550	GBS	3¾x4¼	22.5	L	Own	F	Zen	V	.....	Bos	AuL	DG	.....	U	3	Ther	GC	.....	W	.....	¾	6.1	25.1	Wol	32x4½*	32x4½*	Bim	Fir	2500	132
Rainier R-29	2150	Cont N	3¾x5	22.5	L	Har	FS	Zen	V	Mon	Eis	.....	B-Li	B-Li 30	U	3	Spic	Per	Tim 1250	W	Tim 6250	½	6.75	22.5	Lav	34x3½	34x4	Jon	.....	2700	133
Sandow G	1695	Cont N	3¾x5	22.5	L	Chic	FS	Strm	G	.....	Eis	.....	Full	Full TU¾	U	3	Spic	.....	Shel FA-500	W	Tim 1501W	...	7.	23.4	Ros	.....	.....	Opt	Fir	3000	120
Sanford W-10	....	Cont 8-R–6	3 5/16x4½	27.3	L	R-T	F	Strm	G	.....	Con	Dy	B.B.	B-Li 30	U	3	Spic	Shel	Sals D	B	Sals D	¾	5.75	23.5	Gem	33x5*	33x5*	Hoo	Fir	....	140
Signal NF	....	Cont J-4	3¾x5	22.5	L	Lng	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	3	UM	Det	.....	W	.....	½	7.2	.....	Ros	34x5*	36x6*	StM	.....	3575	132
Stewart 16	1095	Lyco	3¾x5	22.5	L	Own	FS	Zen	G	.....	Rm	Rm	Full	.....	U	3	Spic	Det	.....	B	.....	¾	5.1	24.	Gem	34x4½	34x4½	.....	Fir	2480	130
Transport 15	....	Cont N	3¾x5	22.5	L	Mod	FS	Zen	V	.....	Rm	Rm	Full	Full SU-1	U	3	Sned	Det	Col 5000	B	Col 51000	¾	5.1	20.4	Lav	32x4½*	32x4½*	Mot	Fir	2950	128
Triangle AA	1285	H-Sp	3½x5	16.9	L	Per	FS	Strm	G	.....	NE	NE	Full	Full LTU 4	U	3	UP	Det	Torb 75	B	Clark B-306	½	5.66	22.64	Gem	34x4½	34x4½	Nor	Fir	2600	123
United Highway Spec'l	....	H-Sp 7000	3½x5	19.6	L	Per	FS	Zen	G	.....	Bos	Bos	Full	Full	U	3	Spic	Det	.....	B	Col	½	5.8	19.9	Lav	32x4½	32x4½	.....	Fir	2500	128
Wichita K	1875	Wau BX	3¾x5¼	22.5	L	EM	FS	Strm	G	Wau	Bos	NE	Own	B-Li 35	A	4	Ther	Det	Shel	W	Shel 1500	½	Opt	.....	Ros	36x3	36x4	Bim	Fir	3650	144
Wilcox AA	1900	Buda WTU	3¾x5⅛	22.5	L	.....	S	Strm	V	Dup	Bos	.....	B-Li	.....	U	3	Spic	Shel	.....	W	.....	½	7.7	25.8	Gem	35x5*	35x5	.....	.....	3600	130
Wisconsin A	1750	Cont J4	3¾x5	22.5	L	Chic	FS	Strm	V	Phar	Bos	Bos	B-Li	B-Li 31	U	3	Spic	Det	Tim	W	Tim 5511	½	6.25	31	Lav	32x4½	32x4½	Bim	Gdy	3100	132
Yellow Cab Express T1	....	Cont V4	3¾x5	22.5	L	Lng	FS	Zen	G	.....	Bos	NE	B-Li	.....	U	4	Spic	.....	Tim 1322	B	Tim 5773	½	4.29	18.1	Gem	33x5*	33x5*	Bud	Fir	3130	130

1¼ Ton

Atlas 25	1495	Buda WTU	3¾x5½	22.5	L	Own	F	Zen	G	.....	AtK	Dy	B.B.	Own	U	3	Ster	IC	Col	W	Own	½	.....	.....	CAS	34x4½*	34x4½*	Sch	Opt	2950	130
Autocar F	2200	Own 2	4¾x4½	18	L	Own	S	Strm	G	.....	.....	.....	Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo	.....	3800	97
Autocar G	2300	Own 2	4¾x4½	18	L	Own	S	Strm	G	.....	.....	.....	Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo	.....	3900	120
Clinton 20	1980	Buda WTU	3¾x5½	22.5	L	Own	F	Zen	V	.....	RBo	Bos	B-Li	B-Li 30	U	3	M-E	Row	Tim 1250	W	Tim 6250	½	5.6	18.6	Ros	34x5*	34x5*	StM	Fir	3660	150
Clydesdale 10	....	Cont N	3¾x5	22.5	L	Own	FS	Zen	V	.....	Bos	Bos	B.B.	B-Li 20	U	3	Spic	Stan	Stn 3780	B	Tim 5511	½	6.1	20.4	Ros	34x5	34x5	.....	Fir	3100	138
Clydesdale 10A	....	Cont N	3¾x5	22.5	L	Own	FS	Zen	V	.....	Bos	Bos	B.B.	B-Li 20	U	3	Spic	Stan	Stn 3780	W	Tim 6250	½	6.75	22.5	Ros	34x5	34x5	.....	Fir	3100	138
Denby 31	1485	Cont N	3¾x5	22.5	L	Lng	FS	Strm	G	.....	Eis	Rm	Full	.....	U	3	UP	Det	Tim	B	Clark	½	5	15	Ros	34x5	34x5	Mot	Fir	2840	130
Dependable A	1750	Buda MU	3 5/16x5½	21	L	Lng	F	Zen	V	Mon	Spl	AuL	B.B.	.....	U	3	Acm	Per	.....	W	.....	½	6.25	20.55	Ros	35x5*	36x6*	Bim	Fir	4000	134
Diamond T-O3	....	Hin	3¾x5¼	22.5	L	GO	F	Strm	V	.....	Bos	.....	Covt	.....	U	3	Spic	Math	.....	W	.....	½	6.20	26.06	Gem	36x3½	36x4	.....	.....	3800	132
Eagle 101	1875	Buda WTU	3¾x5⅛	22.5	L	Own	F	Zen	G	Opt	Eis	Bos	Covt	.....	U	3	M-E	Cham	.....	I	.....	D	6.6	24	Ros	34x5	34x5	Stn	Fir	3800	130
Gramm-Pioneer, 10 Sp.T	1365	Lyco CT	3¾x5	22.5	L	Own	F	Zen	G	.....	Con	AuL	Mun	.....	U	3	Own	Per	Sals	B	Sals 1483	¾	5.75	23	Ros	33x5*	33x5*	Day	Fir	2370	129
Hurlburt ST	1850	Buda WTU	3¾x5½	22.5	L	Own	FS	Zen	G	.....	Eis	AuL	B-Li	.....	U	3	Spic	Per	.....	W	Tim	...	6.1	.....	Ros	34x5*	34x5*	.....	.....	3250	130
Larabee-Deyo X-2	....	Cont 8R–6	3 5/16x4½	27.3	L	Fed	F	Zen	G	.....	Bos	Bos	B-Li	B-Li 30	U	3	Sned	Shel	Sals B	B	Sals 1480E	¾	5.75	23	Gem	34x5	34x5	Ind	Fir	3350	138
Maccar EX	....	Wis SU	4 x5	25.6	H	Own	F	Strm	V	.....	Bos	Bos	B-Li	B-Li 31	U	3	Spic	Row	Sals 1428E	B	Sals 1480E	...	5.85	28.08	Ros	34x5*	34x5*	Van	Gdy	3400	132
Master 11	....	Buda WTU	3¾x5½	22.5	L	Chic	...	Zen	G	.....	Wes	Wes	Full	Full	U	3	.....	Det	Tim	B	Tim 5511	½	5.5	22	Ros	33x5	33x5	StM	Fir	3200	132
Menominee HT	2000	Wis CAU	3¾x5	22.5	L	Own	FS	Strm	G	Mon	Eis	Opt	Det	Cott AAU	U	3	Spic	Tut	Shul	W	Wis	½	7.75	28.52	Ros	34x3½	36x5	Stn	Fir	3525	130
Perfection B	1545	Cont N	3¾x5	22.5	L	Own	FS	Zen	V	.....	Rm	Rm	B B.	Own AAU	U	3	Spic	Own	Tim 1216B	Op	Tim 5511	½	5.6	25.3	Lav	34x4½	24x4½	Bim	Mil	3175	134
Reo F Speedwagon	1185	Own	4 1/16x4½	27.2	4&H	Own	S	John	G	.....	NE	NE	Own	Own	A	3	Own	Pen	Own	S	Own	½	4.7	17.3	Own	34x4½	34x4½*	Mot	Fir	2655	128
Republic Rapid Transit	....	Lyco C	3¾x5	22.5	L	Own	FS	Strm	V	.....	Bos	Bos	Full	Full LTU	U	3	Spic	Math	.....	I	Torb	D	5.65	22.6	Jac	33x5*	33x5*	Mot	Fir	2700	124
Ruggles 20-R	1375	Own	4 x5	25.6	L	Per	F	Strm	G	.....	Rm	Rm	B-Li	B-Li 30	U	3	Spic	Det	Col 5000	B	Col 52000	¾	5.12	20.48	Jac	34x5*	34x5*	Nor	Fir	2950	128
Schwarts 20	1980	Buda WTU	3¾x5½	22.5	L	Own	F	Zen	V	.....	RBo	Bos	B-Li	B-Li 30	U	3	M-E	Row	Tim 1250	W	Tim 6250	½	5.6	18.6	Ros	34x5*	34x5*	StM	Fir	3660	150
Service 25	....	Buda WTU	3¾x5⅛	22.5	L	Lng	F	Zen	V	.....	Rm	Rm	B-Li	B-Li 30	U	3	M-E	Shel	Shul 312	B	Eat 1000	½	5.8	22.1	Ros	34x5*	34x5*	Bim	Fir	3300	132
Standard 75	1330	Cont N	3¾x5	22.5	L	Lng	F	Strm	V	.....	Eis	.....	B-Li	B-Li 30	U	3	Spic	Am	Tim 1250	W	Tim 6250	½	5.6	24.3	Ros	33x5*	33x5*	Dis	Fir	3000	134
Stewart 15X	1495	Buda WTU	3¾x5½	22.5	L	Bus	F	Zen	G	.....	Eis	Dy	Full	.....	U	3	Spic	Det	.....	B	.....	D	6.7	26.8	Ros	35x5*	35x5*	Way	Fir	3030	128
U. S. U	1875	Buda WTU	3¾x5⅛	22.5	L	Lng	F	Strm	V	.....	Bos	Bos	Full	Full SUI	U	3	Bld	Shel	Shul 250	B	Clark B	½	6.25	25	Lav	34x5	34x5	Sch	Fir	3400	138
Yellow Cab M42-1¼	1640	Cont V-4	3¾x5	22.5	L	Lng	FS	Zen	G	.....	Bos	.....	B-Li	.....	U	3	Spic	Math	.....	W	.....	½	7.2	24	Gem	35x5*	35x5*	Stn	Fir	2850	130

1½ Ton

Acme 30	....	Cont J–4	3¾x5	22.5	L	GO	FS	Zen	V	Dup	Eis	Bos	B.B.	Cott AAU	U	3	Bld	Det	Tim 1452	W	Tim 6352	½	7.2	28.8	Ros	34x3½	34x5	Bim	.....	3406	129
Armleder 21B	2550	Buda GTU	4 x5¼	25.6	L	Lng	F	Zen	V	.....	Bos	Wes	Full	Full LTU	U	3	Spic	Math	Tim 1458B	W	Tim 6460	½	7.75	31	Ros	34x3½	34x6	StM	.....	4400	Op
Armleder 40B	2900	Buda HTU	4¼x5½	28.9	L	Lng	F	Zen	G	Phar	Bos	Wes	B-Li	B-Li 50	U	4	Spic	Math	Tim 1520	W	Tim 6460	½	7.75	41.5	Ros	34x3½	34x6	StM	.....	4600	Op
Armleder 40C	2900	Cont C-4	4 1/16x5¼	27.2	L	Lng	S	Zen	G	Phar	Bos	.....	B-Li	B-Li 50	U	4	Spic	Math	Tim 1520	W	Tim 6460	½	7.75	41.5	Ros	34x3½	34x6	StM	.....	4600	Op
Atterbury 20R	2475	Cont J-4	3¾x5	22.5	L	Own	F	Zen	V	Sim	Eis	.....	Full	Full LTU	U	3	Spic	SP	Tim 1452	W	Tim 6460	¾	7.75	31	Ros	34x4	34x6	Arc	Fir	4500	144
Autocar F	2200	Own 2	4¾x4½	18	L	Own	S	Strm	G	.....	.....	.....	Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo	.....	3900	120
Autocar G	2300	Own 2	4¾x4½	18	L	Own	S	Strm	G	.....	.....	.....	Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo	.....	4000	145
Available JH–1½	2450	Her O	4 x5	25.6	L	Chic	S	Zen	G	Pier	Bos	.....	B-Li	B-Li 30	U	3	M-E	Tut	Tim	W	Tim 6460	½	7	28	Ros	36x3½	36x5	Sch	Fir	3800	144
Bessemer H2	1995	Cont N	3¾x5	22.5	L	Stn	FS	Strm	G	.....	Bos	Bj	B.B.	B-Li 35-449X	A	3	Bld	Per	Shul 350	R	LM 7150	½	.....	.....	Ros	36x3½	36x5	Sch	.....	3900	138
Brinton C	2500	Cont N	3¾x5	22.5	L	Bus	F	Strm	G	.....	Bos	.....	B-Li	B-Li	U	3	Spic	Tut	Tim 1542	W	Tim 6560	¾	.....	33.6	Ros	34x4	34x5	Sch	.....	4000	140
Brockway S	....	Wis SU	4 x5	25.6	H	Bus	F	Zen	V	Han	Bos	.....	B-Li	B-Li 30	U	3	Spic	Mer	Tim 1452	W	Tim 6460	½	7.75	31.2	Gem	36x4	36x6	Hoo	.....	4000	140
Chicago C	....	Her O	4 x5	25.6	L	.....	F	Strm	G	.....	Bos	.....	B-Li	B-Li 30	U	3	Pet	Math	Tim 1520	R	Huck 15	¾	7.36	34	Gem	36x3½	36x5	Opt	Fir	4500	144
Commerce 14B	....	Cont J-4	3¾x5	22.5	L	Lng	F	Zen	V	.....	Eis	Bos	B-Li	B-Li	A	4	UM	Am	.....	W	Tim	¾	7	37.45	Ros	32x6	32x6	Mot	Fir	4135	146
Corbitt D-22	....	Cont J-4	3¾x5	22.5	L	McC	FS	Strm	V	Sim	Eis	.....	B-Li	B-Li 30	U	3	Hart	Shel	Shel D343	W	Shel W-103	½	7.8	.....	Ros	34x3½	34x5	Bim	Fir	4150	140
Day-Elder AN	....	Buda WTU	3¾x5⅛	22.5	L	Bus	F	Zen	V	.....	Eis	.....	B-Li	B-Li 20	U	3	Hart	Shel	Col 7018	W	Tim 6352	½	6.2	20.71	Gem	34x3½	34x4	Van	Fir	3000	128
Diamond T-T	....	Hin	3¾x5¼	22.5	L	GO	F	Strm	V	Own	Bos	.....	Covt	.....	U	3	Spic	Math	.....	W	Own	½	18.2	29.9	Gem	36x3½	36x5	.....	.....	4150	144
Diehl B	....	H-Sp 7000	3½x5	19.6	L	.....	FS	Zen	G	.....	Bos	.....	M-E	Durs 02500B	...	3	M-E	Row	Sals 1544E	I	Torb S 327	D	5.3	.....	Ros	.....	.....	Way	.....	2500	120
Dixon D	2650	Cont J-4	3¾x5	22.5	L	GO	F	Zen	G	Pier	Bos	.....	Full	Full	U	4	Hart	SP	.....	W	Tim	F	Opt	Opt	Ros	36x3	36x6	StM	.....	4300	145
D-Olt AA	2450	Mid 408	3 5/16x5	21.	L	GO	S	Zen	V	Dup	RBo	.....	B-Li	B-Li 30	U	4	Spic	SP	Tim 1250	W	Tim 6250	½	7.75	37.2	Ros	34x4	34x5	.....	.....	4500	168
Duplex GH	....	Buda WTU	3¾x5½	22.5	L	Mod	FS	Zen	G	.....	Wes	Wes	Covt	Covt	U	3	Pet	Pen	.....	W	Shel	½	6.5	26	Woh	36x5*	36x5	Mot	Fir	3900	138
Federal S-21	....	Cont J-4	3¾x5	22.5	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	Own	A	3	Pet	.....	Own	W	Tim 6352	½	7.2	20.65	Gem	36x3½	36x5	.....	.....	3900	144
Federal S-22	....	Cont J-4	3¾x5	22.5	L	Own	F	Zen	V	.....	Eis	Rm	B.B.	Own	A	3	Pet	.....	Own	W	Tim 6352	½	7.2	20.65	Gem	34x5*	36x6*	.....	.....	3900	144
Garford 25 B	2375	Buda WU	3¾x5½	22.5	L	Own	S	Strm	V	.....	Spl	.....	Own	Own	A	3	Spic	Per	Own	W	Tim 6460	½	7.75	.....	Ros	36x3½	36x5	.....	.....	4000	135
Graham Bros CA	1325	Dodge	3 1/16x4½	24.1	L	McC	FS	Stew	V	.....	NE	NE	Dod	Dod	U	3	UP	Det	Dod	S	Own B-360	½	6.28	29.29	Dod	33x4½*	36x6	.....	.....	2910	140
Gramm-Pioneer 15	1750	Cont N	3¾x5	22.5	L	Own	FS	Strm	G	.....	NE	NE	Full	Full	U	3	Own	Per	Col	W	Own 602-8	½	7.8	28	Ros	36x3½	36x5	Bim	Fir	3660	138
Gramm-Pioneer 65	2250	Cont J-4	3¾x5	22.5	L	Own	FS	Strm	G	.....	NE	NE	Full	Own	A	3	Own	Per	Col	W	Own 602-8	½	7.8	28	Ros	36x3½	36x5	Bim	Fir	3860	138
G. W. W. Super	1650	Wis SU	4 x5	25.6	H	Own	F	Zen	G	.....	Bos	Bos	Full	Full	U	3	Bld	GC	Shul 350	I	Clark 1D	D	6.	18	Woh	35x5*	35x5*	Roy	Fir	3200	142
Hawkeye K	1900	Buda WTU	3¾x5½	22.5	L	.....	F	Zen	G	.....	Eis	.....	Full	Full	U	4	Pick	Det	Shul	I	Clark 1D	D	7.6	.....	Ros	34x5*	38x7	Day	.....	3750	149
Hug	1350	Buda WTU	3¾x5⅛	22.5	L	Per	F	Zen	G	.....	Bos	.....	Full	Full SU-1	U	3	Bld	Tut	Col 5000	B	Clark BSpec	½	5.5	26.62	Ros	34x5	34x5	Stn	Fir	2900	118

TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual ‡Solid — Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1			2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18			19			20	21		
1½ Ton—Con'd																															
Independent G (Iowa)	2040	Cont J	3¾x5	22.5	L	GO	FS	Strm	V	.....	Bos	.....	Full	.....	U	3	Bld	GC	.....	I	.....	D	8.2	.....	Lav	34x3½	34x5	StM	Fir	3875	142
Indiana 12	....	Wau BUX	3¾x5½	22.5	L	McC	F	Strm	G	.....	Eis	.....	B.B.	B-Li 35	A	3	Spic	Shel	Shel 33FA500	W	Shel W-1501	½	7.8	31.2	Woh	34x3½	34x6	Bim	.....	4100	146
International 31	....	Own	3½x5½	19.6	L	Own	FS	Ens	G	Own	Bos	Own	Own	.....	A	3	Own	.....	.....	I	.....	D	8	26.5	Own	.....	.....	Own	.....	3200	128
Jumbo 15-S	....	Buda WTU	3¾x5½	22.5	L	Own	F	Zen	G	.....	Eis	NE	Full	Full LTU5	U	3	Bld	SP	Col 7000	B	Clark B-360	F	6.2	25	Jac	36x6*	36x6*	.....	Fir	4170	143
Jumbo 15	....	Buda CTU	3¾x5¼	22.5	L	Own	F	Zen	G	.....	NE	NE	Full	Full LTU 5	U	3	Bld	SP	Col 7000	I	Clark ID	D	7.2	29	Jac	36x3½‡	36x5‡	.....	Fir	4530	144
Kearns N	1650	H-Sp 7000	3½x5	19.6	L	Own	FS	Zen	V	.....	Bos	Dy	Full	.....	U	3	M-E	Shel	.....	I	.....	...	7.6	30	Lav	34x4	34x6	.....	Fir	3000	136
Kelly-Springfield K33	2700	Own	3⅞x5¼	24.1	L	Lng	F	Zen	G	Pier	Eis	Del	B.B.	B-Li 51	A	4	Pet	Per	Own	W	Own	½	7.75	41.5	Gem	36x3½	36x6	StM	.....	5450	150
Kenworth	....	Buda ITU	4 x5½	25.6	L	Idl	F	Strm	V	Mon	Bos	.....	B.B.	Cott BUA	U	3	Bld	Tut	Shel	W	Shel W-103	½	7.7	31	Ros	36x3½	36x6	Jon	.....	4620	142
King Zeitler	2275	ContJ -4	3¾x5	22.5	L	Chic	F	Strm	G	Phar	Eis	Bos	B-Li	B-Li 35	A	4	Pick	Mar	Tim 1520	W	Tim 6460	½	7	38.52	Gem	34x4	34x6	Bim	Fir	4300	140
Larrabee	2400	Cont J-4	3¾x5	22.5	L	R-T	F	Zen	G	Phar	Bos	.....	B-Li	B-Li 30	U	3	Spic	Shel	Shel 33FA500	W	Shel W-1501	½	7.66	31.4	Gem	34x3½	34x5	Hoo	.....	4500	138
Luedinghaus W	2490	Wau BUX	3¾x5¼	22.5	L	Own	FS	Sheb	G	Wau	Spl	.....	B.B.	.....	U	3	Spic	Tut	.....	W	.....	½	8.6	26.6	Lav	34x3½	34x5	StM	.....	4100	144
Maccar L1	....	Wis TAU	4 x6	25.6	L	Own	F	Strm	V	Pier	Eis	Bos	B-Li	B-Li 35	U	4	Spic	Mer	Tim 1522	W	Tim 6460	½	8.75	46.8	Ros	36x4‡	36x6‡	Day	.....	4900	150
Mack AB	3000	Own AB	4 x5	25.6	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	U	4	Spic	Mer	Own	C	Own	D	6.99	37.84	Own	36x4	36x3½‡†	.....	.....	5100	Op
Mack AB	3450	Own AB	4 x5	25.6	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	U	4	Spic	Mer	Own	R	Own	F	7.6	36.80	Own	36x4	36x3½‡†	.....	.....	5300	Op
Mason Road King	....	Her O	4 x5	25.6	L	Fed	F	John	G	.....	AuL	AuL	Hoos	W-Gr	A	3	Spic	Arm	Fli	B	Fli	F	4.9	17.42	Lav	34x5	34x5	Hay	Fir	3320	130
Master 21	....	Buda OU	4½x5½	27.2	L	Chic	F	Zen	V	Pier	Eis	.....	Full	Full	U	3	Spic	Det	Shel	W	Tim	½	Opt	Opt	Ros	34x4	34x6	Pru	.....	4300	142
Maxwell	....	Own	3⅝x4½	21	L	Own	FS	Stew	G	.....	AtK	Rm	Own	.....	U	3	Own	.....	.....	W	.....	½	7.25	34.4	Own	35x5	35x5	Kel	Fir	2385	124
Menominee H	2475	Wis EAU	4 x5	25.6	L	Own	FS	Strm	G	Mon	Eis	Opt	Det	Cott AAU	U	3	Spic	Tut	Shul	W	Wis	½	8.25	30.36	Ros	36x3½	36x5	Stn	Fir	4220	144
Moreland BX	2350	Her O	4 x5	25.6	L	Own	F	Zen	G	.....	AuL	AuL	B-Li	B-Li 30	U	3	Pet	US	Tim 1452	W	Tim 6461	½	7	28	Ros	36x3½	36x6	Smi	.....	4125	132
Nelson-LeMoon G-2	....	Cont K-4	4½x5¼	27.2	L	Chic	F	Strm	G	Phar	Bos	Bos	B-Li	B-Li 35	U	3	Own	GC	Tim 1520	W	Tim 6460	½	7	.....	Ros	36x4	36x6	StM	Gdy	3400	Op
Ogden D	....	Cont N	3¾x5	22.5	L	Chic	S	Zen	V	Phar	Spl	.....	B-Li	B-Li	U	3	M-E	Tut	Tim	W	Tim	½	7.75	25.8	Ros	36x3½	36x5	Stn	.....	3400	136
Parker E-24	2150	Wis SU	4 x5	25.6	H	Own	F	Strm	V	.....	Wes	Wes	Full	Full SU2	U	3	Bld	Tut	Cont 2001	W	Wis 800-HA	½	7.25	29.8	Lav	34x3½	34x6	Bim	.....	3700	140
Rainier R36	2590	Cont J-4	3¾x5	22.5	L	EM	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 30	U	3	Spic	Per	Tim 1520	W	Tim 6460	½	7.75	25.8	Ros	34x3½	34x5	Jon	.....	3900	147
Rumely A	2150	Buda CTU	3¾x5¼	22.5	L	Mod	F	Strm	G	Pier	Spl	.....	Full	Full LTU 5	U	3	Bld	Math	Shul 510	W	Shel 1501-W	½	7.8	31.2	Gem	36x3½	36x5	Mot	Gdy	4055	144
Sandow	1895	Cont N	3¾x5	22.5	L	Chic	FS	Strm	V	.....	Eis	.....	Full	Full TU-¾	U	3	Spic	.....	.....	W	Shel 1501-W	...	7.75	.....	Ros	.....	.....	Opt	Fir	3495	138
Sanford W-15	....	Cont N	3¾x5	22.5	L	R-T	S	Strm	V	.....	Con	Dy	B-Li	B-Li 30	U	3	Spic	Shel	Shel 33FA500	W	Shel 1501	½	6.5	26.67	Ros	36x6	36x6	Hoo	Fir	3800	140
Schacht H	2500	Wis SU	4 x5	25.6	H	Own	F	Zen	V	.....	.....	.....	Full	Full	U	4	Bld	Shel	.....	R	Wis	½	7	33.6	Ros	36x3½	36x7	.....	.....	4400	144
Selden Unit 30	2375	Cont J-4	3¾x5	22.5	L	Lng	F	Strm	G	.....	Eis	.....	B-Li	B-Li 30	U	3	Spic	Per	Tim 1452	W	Tim 6460	½	7	23.31	Lav	34x3½	34x5	Arc	.....	4250	137
Service 33	....	Buda GBU-1	4 x5¼	25.6	L	McC	F	Strm	V	.....	Eis	.....	B.B.	B-Li 35	A	4	Spic	Shel	Shul 350	W	Tim 6352	½	7.2	38.5	Ros	34x3½	34x6	Stn	Opt	4485	146
Signal H	....	Cont K-4	4½x5¼	27.2	L	R-T	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Shel	.....	W	.....	½	7.75	31	Ros	34x4	36x6	StM	.....	4760	146
Standard 1½K	1695	Cont N	3¾x5	22.5	L	Lng	F	Strm	V	.....	Eis	.....	B-Li	B-Li 30	U	3	Spic	Am	Tim 1452	W	Tim 6352	½	7.2	31.3	Ros	34x3½	34x5	.....	.....	3466	134
Sterling	3240	Own	4 x5¾	25.6	L	Own	F	Zen	V	Wau	Eis	.....	B-Li	B-Li 35	U	4	Spic	Math	Tim 1452B	W	Tim 6460	½	7	37	Ros	36x3½	36x5	Pru	.....	4700	142
Stewart 9	1870	Cont N	3¾x5	22.5	L	Bus	FS	Zen	V	.....	Eis	.....	Full	.....	U	3	Hart	Det	.....	I	.....	D	7.6	22.8	Gem	34x3½†	34x6	Way	Fir	3680	140
Stoughton B	2150	.....	.....	.....	L	Own	FS	Strm	G	Wau	Eis	.....	B-Li	B-Li 30	U	3	Ther	Own	Shel 33FA500	W	Shel W-1501	½	7.8	32	Ros	36x3½	36x5	Bim	Gdy	3800	140
Stoughton BJ	1550	.....	.....	.....	H	Chic	F	Zen	V	.....	Rm	Rm	B-Li	B-Li 30	U	3	Ther	Own	Col 5058	B	Col 52003	¾	5.87	24	Ros	34x5	34x5	Bim	Gdy	3250	140
Traffic Speedboy	1750	Cont N-4	3¾x5	22.5	L	Own	FS	Cart	G	.....	Bos	GD	Covt	Covt MUNC	U	3	Ther	Det	Own	I	Russ 34-I	D	6.15	22.5	Own	35x5*	35x5*	Day	Fir	3400	128
Transport 26	....	Buda WTU	3¾x5½	22.5	L	Mod	F	Zen	V	.....	Eis	Opt	Full	Full SU-1	U	3	Hart	Det	Col 7000	I	Clark I-D	D	7.25	29	Jac	34x3½	34x5	Mot	.....	3800	140
Traylor B	2390	Buda WTU	3¾x5½	22.5	L	GO	F	Zen	G	Sim	Spl	.....	Covt	Covt MOSE	U	3	M-E	Mer	Shel 33FA500	W	Shel W-1501	½	.....	.....	Ros	34x3½	34x6	Sch	.....	4000	140
Triangle A	1985	Wau BUX	3¾x5¼	22.5	L	Per	FS	Strm	G	Wau	Eis	.....	Full	Full LTU5	U	3	UP	Det	Col 7007	I	Clark 1-D	D	7.25	29	Gem	34x3½	34x6	Roy	Fir	3750	144
Ultimate A	3200	Buda ITU	4 x5½	25.6	L	Own	F	Strm	G	Pier	Eis	Bos	B-Li	.....	U	4	Spic	Shel	Shel D-370	W	Shel W-301	½	6.5	37.4	Ros	36x3½	36x6	Jon	Fir	4500	140
United Express	....	Her O	4 x5	25.6		Per	FS	Zen	G	.....	Bos	Bos	B-Li	B-Li	U	3	Spic	.....	.....	B	Col	¾	5.1	20.86	Lav	34x5	34x5	.....	Fir	3050	148
U. S. N	2225	Cont N	3¾x5	22.5	L	Lng	FS	Strm	V	.....	Eis	Opt	Full	Full LTU 4	U	3	Opt	Shel	Shul 350	I	Clark ID	D	7 6	25.3	Lav	36x3½	36x5	Sch	.....	3800	144
Velie 52	1785	Her CU2	3¾x5½	22.5	L	Own	F	Strm	V	Mon	Ber	.....	B.B.	Own	U	3	Arv	Math	Col	I	Torb	D	8.33	32.48	Ros	36x4	36x6	Bim	Fir	4050	141
Wilcox BB	2550	Own	4¼x5	28.9	L	.....	S	Strm	G	Dup	Bos	.....	Own	.....	A	4	Own	Shel	.....	R	.....	½	8.25	29.9	Own	36x4	36x5†	.....	.....	4600	135
Wisconsin B	1850	Wau Y	4 x5¼	25.6	L	Chic	FS	Strm	V	Phar	Opt	Bos	B-Li	B-Li 31	U	3	Spic	Det	Tim	W	Tim 5511	½	6.25	31.5	Lav	33x5	32x6	Bim	Gdy	3200	136
Witt-Will N	2450	Cont C-4	4¼x5¼	27.2	L	Own	FS	Zen	G	Pier	Eis	.....	B-Li	B-Li 35	U	3	Spic	Del	Tim 1520	W	Tim 6460	½	7	30.36	Ros	36x3½	36x5	Arc	Fir	4000	144
2 Ton																															
Acason K-2	2150	Buda GTU	4 x5¼	25.6	...	.....	...	Zen	V	.....	Bos	.....	Full	Full	U	3	....	.....	.....	W	Tim	...	.....	.....	Ros	36x4	36x8	Smi	.....	.....	166
Acme 40	....	Cont J-4	3¾x5	22.5	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott AAU	U	3	Bld	Det	Tim 1520	W	Tim 6460	½	8.75	35	Ros	34x3½	34x5	Bim	.....	3982	141
Acme 40-L	....	Cont K-4	4½x5¼	27.2	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott RU	U	4	Bld	Det	Tim 1520	W	Tim 6460	½	7	36.4	Ros	34x3½	34x5	Bim	.....	4583	147
American-LaFrance 2R	....	Own	4¼x6	28.9	L	Bus	F	Strm	G	Own	Spl	Wes	Own	Own	A	4	Own	Mer	Own	R	Own	F	7.57	40.8	Own	36x6*	40x8	.....	.....	.....	160½
Atlas 40	1950	Buda WTU	3¾x5½	22.5	L	Own	F	Zen	G	.....	Spl	Dy	B.B.	Own	U	3	M-E	IC	Col	W	Own	½	.....	.....	Ros	36x6*	36x6*	Sch	Opt	3300	146
Autocar F	2200	Own 2	4¼x4½	18	L	Own	S	Strm	G	.....	.....	.....	Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo	.....	3800	97
Autocar G	2300	Own 2	4¼x4¼	18	L	Own	S	Strm	G	.....	.....	.....	Own	Own	A	3	Spic	Del	Own	R	Own	F	8.3	33.2	Ros	34x4	34x6	Hoo	.....	3900	120
Autocar H	3100	Own	4 x5½	25.6	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	7.72	46.3	Ros	34x5	36x7	Hoo	.....	5500	114
Autocar K	3200	Own	4 x5½	25.6	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	7.72	46.3	Ros	34x5	36x7	Hoo	.....	5600	138
Available JH-2	2750	Her O	4 x5	25.6	L	Chic	FS	Zen	G	Pier	Bos	.....	B-Li	B-Li 30	U	3	M-E	Tut	Tim	W	Tim 6560	F	7.75	31	Ros	36x4	36x6	Sch	.....	4400	152
Belmont D	2575	Buda ETU	4¼x5½	28.9	L	R-T	F	Zen	..	Pier	Apo	Dy	Full	Full LTU-5	U	3	Spic	Math	Shul 510	I	Russ 8500-I	...	9.3	39	Lav	35x5	36x6	E&O	Fir	4635	144
Bethlehem GN	2185	Own	4 x5¼	25.6	L	GO	F	Zen	V	Pier	Bos	GD	B.B.	Det C	U	4	UP	Math	Shel.33FA500	R	Wis 60A	½	7.75	24.8	Lav	34x4	34x6	.....	.....	4100	138
Buffalo Model 9	....	Her CU	4 x5½	25.6	L	Own	F	Strm	V	Pier	Bos	Bos	Covt	Covt	..	..	Spic	Shel	Shel D-370	W	Shel W-103	½	7.75	....	Ros	34x5‡	36x7‡	Jon	Gdy	5400	140
Case TR	....	Own K	4¼x5¼	28.9	H	Mod	S	Bent	G	Own	Eis	.....	T-D	Own T-R	U	3	Spic	Har	Torb 200	I	Torb C-139	D	8	26	Opt	36x6	38x7	.....	Fir	4700	144
Clinton 45	2840	Buda GTU	4 x5¼	25.6	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Ji 35	A	4	M-E	Row	Tim 1520	W	Tim 6460	½	7.75	41.5	Ros	34x4‡	43x3½†	StM	.....	4875	163
Concord G	....	Buda FTU	4 x5½	25.6	L	Own	.....	.....	V	.....	Eis	.....	B-Li	B-Li 35	U	4	.....	Spic	Tim	W	Tim	...	8.75	.....	.....	36x4‡	36x4‡	.....	.....	4150	140
Concord GL	....	Buda FTU	4 x5½	25.6	L	Own	.....	.....	V	.....	Eis	.....	B-Li	B-Li 35	U	4	.....	Spic	Tim	W	Tim	...	8.75	.....	.....	36x4‡	36x4‡	.....	.....	4250	150
Corbitt C-22	....	Cont K-4	4½x5¼	27.2	L	McC	FS	Strm	V	Sim	Eis	.....	B-Li	B-Li 35	U	3	Hart	Shel	Shel 3 FA10	W	Shel W-103	½	8.66	29.4	Ros	36x3½	36x7	Bim	Fir	5265	148
Day-Elder BN	....	Cont J-4	3¾x5	22.5	L	Bus	F	Zen	V	.....	Eis	.....	B-Li	B-Li 30	U	3	Hart	Shel	Col 7018	W	Tim 6460	½	7	28.63	Gem	34x3½	34x5	Van	Fir	3300	144
Denby 33	2375	Cont N	3¾x5	22.5	L	Lng	F	Zen	G	.....	Eis	Bos	Full	Full LTU 4	U	4	UP	Det	Tim	I	Clark	D	7.25	29	Ros	36x3½‡	36x7‡	Mot	Fir	3740	144
Dependable C	2350	Buda CTU	3¾x5¼	22.5	L	Lng	F	Zen	V	Mon	Spl	AuL	Full	Full TU4½	U	3	Acm	Per	Shul TU-4	W	Wis 800-J	½	8.2	31.5	Ros	34x3½	34x5	Bim	Fir	4120	Op
D-Olt A1	2650	Mid 408	3⅜x5	21	...	Own	F	Zen	V	Dup	RBo	Wes	B-Li	B-Li 35	A	4	Spic	SP	Tim 1540 B	W	Tim 6560	F	7.25	49.1	Ros	34x4‡	36x7‡	Day	Fir	4800	168

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TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS (*Pneumatic †Dual ‡Solid): Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1		2	3	4	5	6	7		8	9	10	11	12		13	14	15	16	17	18			19			20	21		
2½ Ton—Con'd																															
Corbitt B-22	....	Cont K-4	4 1/4x5 1/4	27.2	L	MeC	FS	Strm	V	Sim	Eis	.....	B-Li	B-Li 50	U	4	Hart	Shel	Shel 3FA10	W	Shel W-21	1/2	8.75	46.81	Ros	36x4	36x7	Bim	Fir	5325	152
Day-Elder DN	....	Cont K-4	4 1/8x5 1/4	27.2	L	Bus	F	Zen	V	Mon	Eis	.....	B-Li	B-Li 35	U	4	Hart	Shel	Col 7018	W	Tim 6560	F	8.5	45.18	Gem	36x4	36x7	Van	Fir	3950	144
Dependable D	2650	Buda ITU	4 x5 1/2	25.6	L	Lng	F	Zen	V	Mon	Spl	AuL	Full	Full TU4	U	3	Acm	Per	Shul 350	W	Wis 800	1/2	8.5	35.75	Ros	36x4	36x7	Bim	Fir	5300	144
Diamond T–U2	....	Hin	4 x5 1/4	25.6	L	GO	F	Strm	V	Own	Bos	.....	Covt	.....	U	4	Spic	Math	.....	W	.....	F	7.8	36.81	Gem	36x4	36x8	.....	.....	5250	160
Dixon C	3250	Cont K-4	4 1/8x5 1/4	27.2	L	GO	F	Zen	G	Pier	Bos	.....	Full	Full	U	4	Hart	SP	.....	W	Tim	F	Opt	Opt	Ros	36x4	36x8	Smi	.....	5800	154
D-Olt C	2850	Mid 402	4 1/8x5 1/4	27.2	H	Own	F	Zen	G	Dup	RBo	.....	B-Li	B-Li 35	A	3	Spic	SP	Tim 1540	W	Tim 6560	...	8.5	.....	Ros	36x5	36x4†	Day	Fir	5750	168
Duplex AC	....	Hin 400	4 x5 1/4	25.6	L	Mod	...	.....	V	Opt	Eis	Opt	B-Li	B-Li	U	4	Pet	Pen	.....	W	Vul	F	8.50	45.4	Ros	34x5†	36x8	Mot	Fir	5500	160
Duplex AB	....	Hin 400	4 x5 1/4	25.6	L	Mod	...	.....	V	.....	Wes	Wes	B-Li	B-Li	U	4	Pet	Pen	.....	W	Shel	1/2	6.50	34.7	Ros	35x5*	38x7	Mot	Fir	4900	173
Federal U-2	....	Cont K-4	4 1/8x5 1/4	27.2	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	Det	A	4	Spic	.....	Own	W	Tim 6560	F	7.75	45.6	Gem	36x4	36x4†	.....	.....	5300	157
Garford 70 H	3250	Buda HTU	4 1/4x5 1/2	28.9	L	Own	F	Strm	G	Sim	Spl	.....	Own	Own	A	4	Spic	Per	Tim 1542B	W	Tim 6560	F	7.75	.....	Ros	36x4	36x8	.....	.....	5300	144
Gary J	3050	Buda HTU	4 1/4x5 1/2	28.9	L	Chic	FS	Zen	V	McC	Eis	.....	Full	.....	U	4	Spic	Math	.....	W	.....	F	8.5	41	Ros	36x4	36x7	Pru	Gdy	5500	148
Gramm-Pioneer 125	2650	Cont K4	4 1/8x5 1/4	27.2	L	Own	F	Strm	G	Sim	NE	NE	Full	Own	A	4	Own	Per	Col	W	Shel	1/2	7.7	36.7	Ros	36x4	36x7	Bim	.....	4910	...
Harvey WFB	2950	Buda ETU	4 1/4x5 1/2	28.9	L	Own	F	Strm	G	McC	Eis	.....	Full	B-Li 50	A	4	Spic	Bea	Shel D-370	W	Shel W-21	1/2	7.75	37.5	Ros	36x4	36x8	Smi	.....	6800	160
Hawkeye M	2145	Buda HU	4 1/4x5 1/2	28.9	L	Brm	...	Zen	G	Sim	Eis	.....	Full	Full	U	4	Hart	Det	Shul	I	Clark 2D	D	18.	.....	Ros	36x4	36x6	.....	.....	4500	149
Hawkeye ML	2195	Buda HU	4 1/4x5 1/2	28.9	L	Brm	...	Zen	G	Sim	Eis	.....	Full	Full	U	4	Hart	Det	Shul	I	Clark 2D	D	18.	.....	Ros	36x4	36x6	.....	.....	.....	160
Independent HI (Iowa)	2940	Cont K-4	4 1/8x5 1/4	27.2	L	Chic	FS	Strm	V	.....	Bos	.....	Full	.....	U	4	Bld	Tut	.....	W	Shel W21	D	10	.....	Lav	36x4	36x7	StM	Fir	4950	150
Indiana 25	....	Own 38	4 1/8x5 1/2	27.2	L	MeC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 51	A	4	Spic	Shel	Shel D-370	W	Shel W-21	1/2	7.75	41.3	Woh	36x4	36x8	Bim	.....	5850	156
International 52-Bus	....	Own	4 1/4 x5	28.9	H	Own	FS	Ens	V	Own	Spl	Own	Own	.....	A	4	Own	.....	.....	I	.....	D	4.85	25	Own	.....	.....	Own	.....	5515	190
Jumbo 25	....	Buda HU	4 1/4x5 1/2	28.9	L	Own	F	Zen	V	Sim	Eis	.....	Full	Full GU 7	U	4	Bld	SP	Shul 510	I	Clark 2-D	D	9	43.5	Jac	36x4‡	36x8‡	.....	Fir	5190	152
Kelly-Springfield K38	2900	Own	3 7/8x5 1/4	24.1	L	Lng	F.	Zen	G	Pier	Eis	Opt	B.B.	B-Li 51	A	4	Pet	Per	Own	W	Own	1/2	9.25	49.5	Gem	36x4	36x4†	StM	.....	5300	150
Kelly-Springfield K–39	....	Own	3 7/8x5 1/4	24.1	L	Lng	F	Zen	G	Pier	Eis	Del	B.B.	B-Li 51	A	4	Pet	Per	Own	I	Clark 2H	D	9	48.15	Gem	36x4	36x4†	Cla	Fir	5900	150
Kenworth K	....	Buda ETU	4 1/4x5 1/2	28.9	L	Idl	F	Strm	V	Mon	Bos	.....	B.B.	Cott RU	U	4	Bld	Tut	Shel D-370	W	Shel W-21	...	8.75	45.22	Ros	36x4	36x8	Smi	.....	5270	150
King Zeither	2875	Cont K4	4 1/8x5 1/4	27.2	L	Chic	F	Strm	G	Phar	Eis	Bos	B-Li	B-Li 35	A	4	Pick	Mar	Tim 1542	W	Tim 6560	F	9.25	49.48	Gem	36x5	36x8	Bim	Fir	5400	156
Lange E	3450	Cont K-4	4 1/8x5 1/4	27.2	L	Own	F	Strm	V	.....	Apo	.....	B-Li	B-Li 51	A	4	Pet	SP	Tim 1544B	W	Tim 6560	F	9.25	49.5	Ros	36x4	36x7	Hoo	Opt	5600	Op
Larrabee K-5	....	Cont L-4	4 1/2x5 1/2	32.4	L	R-T	F	Zen	G	Phar	Bos	.....	B-Li	B-Li 51	A	4	Spic	Shel	Shel D-370	W	Shel W-22	1/2	7.6	47	Ros	36x4	36x8	Smi	.....	5700	156
Mack AB	3400	Own AB	4 1/4 x5	28.9	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	U	4	Spic	Mer	Own	C	Own	D	8.98	43.5	Own	36x4	36x4†	.....	.....	5400	Op
Mack AB	3850	Own AB	4 1/4 x5	28.9	L	Own	S	Zen	G	Own	Spl	.....	Own	Own	U	4	Spic	Mer	Own	R	Own	F	9.25	44.9	Own	36x4	36x4†	.....	.....	5600	Op
Master 41	....	Buda ETU	4 3/4x5 1/2	28.9	L	Chic	F	Zen	V	Pier	Eis	.....	Full	Full	U	4	Spic	Det	Tim	W	Tim 6560	F	Opt	Opt	Ros	34x4	36x8	Pru	.....	5700	154
Nelson & LeMoon	....	Cont K-4	4 3/4x5 1/4	27.2	L	Chic	F	Strm	G	Phar	Bos	Bos	B-Li	B-Li 50	U	3	Own	GC	Tim 1542	B	Tim 6566	F	7.7	.....	Ros	36x4	36x7	StM	Gdy	4100	Op
Netco HL	3500	Cont L-4	4 1/2x5 1/2	32.4	L	E-M	F	Zen	V	Phar	Eis	.....	B-Li	B-Li 55	A	4	Spic	Math	Tim 1542 B	W	Tim 6560	F	7.75	41.46	Gem	36x4	36x8	Arc	Opt	5750	168
Niles H	3250	Buda ETU	4 1/4x5 1/2	28.9	L	Mod	S	Strm	G	.....	Eis	Bos	B-Li	B-Li 50	U	4	Pet	PS	Tim 1520B	W	Tim 6560	F	9.25	37	Gem	36x6*	40x8*	Hoo	Fir	4935	140
Ogden E2	....	Cont K-4	4 1/8x5 1/4	27.2	L	Chic	FS	Zen	G	Phar	Spl	.....	B-Li	B-Li	...	3	Pick	Tut	Tim	W	Tim	F	7.75	26	Ros	36x4	36x8	Stn	.....	5600	160
Old Reliable B	3500	Wis UAU	4 1/4 x6	28.9	L	Chic	F	Strm	V	Phar	Bos	.....	Full	Full G	A	4	Pet	Shel	Shel D-370	W	Shel W-21	1/2	8.75	42	Ros	34x4	36x4†	Sch	....	6000	Op
Oneida C	3200	Hin 400	4 x5 1/4	25.6	L	Mod	F	Strm	V	Hin	Apo	.....	Full	.....	A	4	Pet	Math	.....	W	.....	1/2	8.6	41.6	Ros	36x4	36x7	Pru	.....	5700	160
Oshkosh B	3685	Her CU-3	4 x5 1/2	25.6	L	Own	F	Strm	V	Dup	NE	NE	B-Li	B-Li 50	U	4	Pet	Tut	Own	B	Own	F	8	43	Ros	40x8*	40x8*	Roy	Fir	5400	146
Oshkosh BB	3785	Her CU-3	4x 5 1/2	25.6	L	Own	F	Strm	V	Dup	NE	NE	B-Li	B-Li 50	U	4	Pet	Tut	Own	B	Own	F	8	43	Ros	40x8*	40x8*	Roy	Fir	5800	165
Parker G-24	3450	Wis UAU	4 1/4 x6	28.9	L	Own	F	Strm	V	Pier	Eis	Wes	B-Li	Full G-7	A	4	Bld	Tut	Shul 510	W	Own	F	7.75	37.2	Ros	36x4	36x8	Bim	.....	5600	150
Power F	....	Hin HA 400	4 x5 1/4	25.6	L	Mod	F	Strm	V	Hin	Eis	Wes	B-Li	B-Li	A	4	Pet	Row	Vul F3	W	Vul F4	F	7.75	37.2	Ros	36x5	36x7	StM	Fir	5300	150
Rainier R-20	3550	Cont K-4	4 1/8x5 1/4	27.2	L	E-M	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 50	A	4	Spi	SP	Tim 1544B	W	Tim 6560	F	8.5	45.47	Ros	36x4	36x8	Jon	.....	5500	165
Rainier R-20	3650	Cont K-4	4 1/8x5 1/4	27.2	L	E-M	F	Zen	V	Pier	Eis	.....	B-Li	B-Li 50	A	4	Spi	SP	Tim 1544B	W	Tim 6560	F	8.5	45.47	Ros	36x4	36x8	Jon	.....	5650	177
Rowe CDW	3575	Wis NU	4 1/4 x5	28.9	L	Fed	F	Zen	G	Sim	Bos	.....	B-Li	B-Li 50	U	4	Spic	Shel	Shel D-370	W	Shel W-21	1/2	7.7	31	Ros	34x4	36x4†	Hoo	.....	4800	142
Ruggles 40-H	2295	Own	4 x5	25.6	L	Per	F	Strm	G	.....	Bos	.....	B-Li	B-Li 35	U	4	Spic	Det	Col 8500	R	Wis 88E	1/2	7.85	42	Jac	36x4	36x8	Nor	Fir	4850	148
Sandow	2750	Cont C-4	4 1/8x5 1/2	27.2	L	Chic	FS	Strm	G	Mon	Bos	.....	B-Li	B-Li 35	U	4	Spic	.....	Tim 1540-B	W	Tim 6560	...	9.25	37	Ros	.....	.....	.....	.....	4600	165
Sanford W-25-A	....	Cont C-4	4 1/8x5 1/4	27.2	L	MeC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 35	A	4	Spic	Shel	Shel D-370	W	Shel 21	1/2	8.7	34.8	Ros	36x4	36x4†	Hoo	Fir	4290	156
Sanford W25 B	....	Cont C-4	4 1/8x5 1/4	27.2	L	MeC	F	Strm	G	Pier	Eis	.....	B.B.	B-Li 35	A	4	Spic	Shel	Shel D-370	R	Shel-21	1/2	8.7	34.8	Ros	36x4	36x4†	Hoo	Fir	5330	174
Selden Unit 50	3250	Cont K-4	4 1/8x5 1/4	27.2	L	Lng	F	Strm	G	Phar	Eis	.....	B-Li	B-Li 51	A	4	Spic	Det	Tim 1544B	W	Tim 6560	F	8.5	45.4	Gem	36x4	36x7	Stn	.....	5980	149
Signal J	....	Cont K-4	4 1/8x5 1/4	27.2	L	Lng	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Det	.....	W	.....	F	9.25	37	Ros	34x4	36x8	StM	.....	5250	150
Signal JL	....	Cont K-4	4 1/8x5 1/4	27.2	L	Lng	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Det	Tim 1542B	W	.....	F	9.25	37	Ros	34x4	36x8	StM	.....	5300	180
Standard 2½-3½ K	2795	Cont K-4	4 1/8x5 1/4	27.2	L	Lng	F	Strm	G	Sim	Eis	.....	B-Li	B-Li 35	A	4	Spic	Am	Tim 1542B	W	Tim 6560	F	8.5	45.4	Gem	36x4	36x8	Day	.....	5400	147
Standard 2½-3½ KS	2875	Cont K-4	4 1/8x5 1/4	27.2	L	Lng	F	Strm	G	Sim	Eis	.....	B-Li	B-Li-55	A	4	Spic	Am	Tim 1542B	W	Tim 6560	F	9.25	49.5	Gem	36x4	36x8	Day	.....	5488	147
Sterling	3700	Own	4 3/8x5 3/4	30.6	L	Own	F	Zen	V	Wau	Eis	.....	B-Li	B-Li 50	U	4	Spic	Math	Tim 1544B	W	Tim 6560	F	7.7	41	Ros	36x4	36x4†	Pru	.....	5620	156
Stewart 7X	2590	Buda HTU	4 1/4x5 1/2	29	L	Bus	F	Zen	V	Pier	Eis	.....	Full	.....	U	4	Spic	Am	.....	I	.....	D	9.	43.2	Ros	34x4†	34x8	Cla	Fir	4820	156
Super Truck 50	3300	Wis.	4 x6	25.6	L	Chic	F	Zen	G	Sim	Bos	.....	Full	Full G	U	4	Ther	Shel	.....	W	Shel W-21	1/2	8.75	42	Lav	36x4	36x8	Pru	.....	5200	156
Triangle B	2785	Wau FU	4 x5 3/4	25.6	L	Whe	F	Strm	G	Wau	Eis	.....	Full	Full GU-7	U	4	Bld	Det	Torb CC3B	I	Clark 2F	D	9.1	43	Gem	36x4	36x7	Roy	Fir	4900	150
Ultimate B	3750	Buda ETU	4 1/4x5 1/2	28.9	L	Own	F	Strm	G	Pier	Eis	Bos	B-Li	B-Li 50	U	4	Spic	Shel	Shel D-370	W	Shel W-21	1/2	7.75	30.2	Ros	36x4	36x8	Jon	Fir	5340	154
Union FW & FLW	3450	Wis TAU	4 x6	25.6	L	GO	F	Sheb	G	Dup	Eis	LN	Full	Full GU-7	U	4	UP	Math	Shel D-370	R	Walk 25A	...	7.86	37.7	Ros	36x5	36x8	Pru	Gdy	5900	155
Union FWC (bus)	....	Wis TAU	4 x6	25.6	L	GO	F	Sheb	G	Dup	Eis	LN	Full	Full GU 9	U	4	UP	Math	Shul 650	R	Walk 25A	...	7.86	37.7	Ros	38x7	42x9	Smi	Gdy	....	200
United 50	....	Her O	4 x5	25.6	L	Per	FS	Zen	G	.....	Bos	.....	B-Li	22C-670	U	4	Spic	.....	.....	R	Wis	1/2	7.	37.4	Lav	34x4	34x8	.....	.....	4700	156
Walter L	3800	Own FU	4 x5 3/4	25.6	L	Bus	F	Strm	G	.....	Eis	Wes	B-Li	.....	A	4	Own	.....	.....	R	.....	F	7.25	39	Gem	36x4	36x8	.....	.....	5800	168
Ward La France 2B	3290	.....	4 3/4x5 3/4	30.6	L	Own	F	Strm	G	.....	Bos	.....	B-Li	B-Li 50	A	4	Spic	Row	Tim 1542B	W	Tim 6560	F	7.25	38.78	Ros	36x4	36x8‡	Hoo	.....	5900	170
Wilcox CC	3000	Own	4 1/4 x5	28.9	L	.....	S	Strm	G	Dup	Bos	.....	Own	.....	A	4	Own	Shel	.....	R	.....	1/2	8.6	42.35	Own	36x4	36x3 1/2†	.....	.....	5000	135
Wisconsin	3100	Cont L-4	4 1/2x5 1/2	32.4	L	Chic	FS	Strm	V	Phar	Eis	Bos	B-Li	B-Li 51	A	4	Pet	Det	.....	W	Tim 6560	F	9.25	.....	Lav	36x5	36x10	Bim	.....	5600	132
Wisconsin, (Sup.Tract.)	3600	Cont L-4	4 1/2x5 1/2	32.4	L	Chic	FS	Strm	V	Phar	Bos	Bos	B-Li	B-Li 50	U	4	Pet	Det	.....	W	Wis	1/2	8.25	.....	Lav	32x6*	32x6*	Bim	.....	5800	136
Witt-Will S	2950	Cont K-4	4 1/8x5 1/4	27.2	L	Own	FS	Zen	...	Pier	Eis	.....	B-Li	B-Li 50	U	3	Spic	Shel	Tim 1542	W	Tim 6560	F	8.25	.....	Ros	36x4	36x8	Arc	Fir	5000	144
3 Ton																															
Acme K (Bus)	....	Cont 6B	3 3/4x5	33.7	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott RU	U	4	Bld	Det	Tim 1540B	W	Tim 6511S	F	6.8	35.36	Ros	38x7*	36x5†	Bim	.....	6900	200
Acme 60-L	....	Cont L-4	4 1/2x5 1/2	32.4	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott RU	U	4	Bld	Det	Tim 1540B	W	Tim 6560	F	8.5	42.2	Ros	36x4	36x7	Bim	.....	5050	156
Autocar H	3100	Own	4 x5 1/2	25.6	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	7.72	46.3	Ros	34x5	36x7	Hoo	.....	5500	114
Autocar K	3200	Own	4 x5 1/2	25.6	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	7.72	46.3	Ros	34x5	36x7	Hoo	.....	5600	138

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TRADE NAME AND MODEL	Chassis Price	ENGINE DETAILS: Make and Model Number (4 cylinder unless otherwise noted.)	Bore and Stroke	N.A.C.C. Horsepower	Valve Arrange't	Radiator (Make)	Lubrication	Carburetor	Fuel Feed	Governor (Make)	Ignition System	Engine Starter	Clutch (Make)	GEARSET: Make and Model Number	Location	Speeds	Universal (Make)	Springs (Make)	FRONT AXLE and Model Number	REAR AXLE: Final Drive	Make and Model Number	Type	Total Gear Reduction in High	Total Gear Reduction in Low	Steering Gear (Make)	TIRES, WHEELS, RIMS: *Pneumatic †Dual ‡Solid — Front	Rear	Wheels (Make)	Rim Equipment	Chassis Weight (Stripped)	Wheelbase
		1			2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18			19			20	21		
3½ Ton—Con'd																															
Selden Unit 70	4175	Cont L4	4½x5½	32.4	L	Lng	F	Strm	G	Phar	Eis	.....	B-Li	B-Li 55	A	4	Spic	Per	Tim 1650 B	W	Tim 6666	F	8.75	46.81	Gem	36x5	36x10	Stn	.....	7200	165
Selden Unit 52	4850	Cont L-4	4½x5½	32.4	L	Lng	F	Zen	V	Phar	Eis	NE	B-Li	B-Li	A	4	Spic	SS	Tim 1550	W	Tim 6511	F	7.75	31	Gem	36x5	36x10	Arc	Opt	7200	195
Selden Unit 53	3550	Cont L-4	4½x5½	32.4	L	Lng	F	Strm	G	Phar	Eis	.....	B-Li	B-Li 51	A	4	Spic	Det	Tim 1544 B	W	Tim 6560	F	8.5	45.4	Gem	36x4	36x7	Stn	Opt	6220	154
Service 72	....	Buda EBU-1	4¼x5½	28.9	L	MeC	F	Strm	V	....	Eis	.....	B.B.	B-Li 60	A	4	Spic	Shel	Tim 1630	W	Tim 6666	F	8.75	42.35	Ros	36x5	36x10	Stn	.....	7610	173
Signal M	....	Cont L-4	4½x5½	32.4	L	Lng	FS	Strm	G	Sim	Eis	.....	B-Li	.....	A	4	Spic	Det	.....	W	.....	F	12	58.08	Ros	36x5	40x10	StM	.....	7350	168
Signal ML	....	Cont L-4	4½x5½	32.4	L	Lng	FS	Strm	G	Sim	Fis	.....	B-Li	.....	A	4	Spic	Det	.....	W	.....	F	12	58.08	Ros	36x5	40x10	StM	.....	7700	204
Standard 3½-5-K	3645	Cont L-4	4½x5½	32.4	L	Lng	F	Strm	V	Sim	Eis	.....	B-Li	B-Li 55	A	4	Spic	Am	Tim 1630B	W	Tim 6666	F	10.3	55.1	Gem	36x5	36x12	Day	.....	7485	160
Standard 3½-5-KS	3725	Cont L-4	4½x5½	32.4	L	Lng	F	Strm	V	Sim	Eis	.....	B-Li	B-Li 60	A	4	Spic	Am	Tim 1630B	W	Tim 6666	F	10.3	55.1	Gem	36x5	36x12	Day	.....	7519	160
Sterling	4750	Own	4½x6¼	32.4	L	Own	F	Zen	V	Wau	Eis	.....	H-S	Own	A	3	Spic	Math	Tim 1632B	W	Tim 6666	F	8.75	39	Ros	36x5	40x5†	Pru	.....	7925	162
Stewart 10-X	3440	Buda YTU	4½x6	32	L	Bus	F	Zen	V	Pier	Eis	.....	Full	.....	U	3	Spic	Det	.....	I	.....	D	10	48.01	Ros	36x5†	36x5†	Cla	Fir	6600	165
Super Truck 70	4100	Wis	4¼x6	28.9	L	Chic	F	Zen	G	Sim	Bos	.....	Full	Full H	A	4	Spic	Shel	.....	W	Shel W-31	½	10.25	49.2	Ros	36x5	40x5†	Smi	.....	7500	164
Transport 61	....	Buda ETU	4¼x5½	28.9	L	Mod	F	Zen	G	Dup	Eis	Opt	Full	Full GU 7	U	4	Bld	Det	Col 8500	I	Clark 2F	D	8.15	39.12	Jac	36x4	36x8	Mot	.....	5600	150
Twin City AW	3500	Own	4¼x6	28.9	H	Spli	F	Strm	V	Own	Bos	.....	B.B.	Full G5	A	4	Spic	Math	Tim 1630B	W	Tim 6652	..	10.33	49.58	Ros	36x5	40x5	Smi	.....	6800	168
United C	....	Buda ETU	4¼x5½	28.9	L	Mod	F	Zen	G	.....	Eis	.....	Full	Full	A	4	Spic	Shel	.....	W	Shel	D	10.25	48.1	Lav	36x5	40x5†	Cla	.....	6700	157
Ward La France 4A	4290	.....	4½x6¼	32.4	L	Own	F	Strm	G	.....	Bos	.....	B-Li	B-Li 60	A	4	Spic	Row	Tim 1630B	W	Tim 6666	F	7.8	41.73	Ros	36x5	36x5†	Smi	.....	7750	162
White 40	4200	Own GR	4¼x5¾	28.9	L	.....	F	Zen	V	Own	.....	.....	Own	Own	A	4	Own	.....	Own	R	Own	F	11.7	48.26	Own	36x5	40x5†	.....	.....	7300	174
Wilcox E	3950	Buda YTU	4½x6	32.4	L	.....	S	Strm	G	Dup	Bos	.....	Own	.....	A	4	Own	Shel	.....	R	.....	½	10	45.1	Own	36x5	36x5†	.....	.....	6600	147
Wisconsin (Six-Wheel)	4600	Cont B-5	4¾x6	32.4	L	Chic	F	Strm	V	Phar	Eis	Bos	B-Li	B-Li 55	U	4	Pet	Det	.....	W	Wis	½	8.25	45	Lav	34x7	34x7	Bim	Gdy	7000	158
4 Ton																															
Acme 90L	....	Cont B-5	4¾x6	36.1	L	GO	FS	Zen	V	Dup	Eis	Del	B.B.	Cott S	A	4	Bld	Det	Tim 1630B	W	Tim 6660	F	8.75	45.5	Ros	36x5	40x5†	Bim	.....	8160	177
American	4275	Wis	4¼x6	28.9	L	GO	F	Strm	G	Pier	Apo	.....	Det	Cott R	A	4	Acm	SP	Sav 40-O	W	Wis 900	½	10	.....	Lav	36x5	36x5†	Smi	.....	7000	158
Autocar L	4350	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7400	156
Autocar M	4200	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7200	120
Bessemer K2	3695	Cont E-7	4½x5½	32.4	L	Spli	FS	Strm	G	Pier	Eis	.....	B.B.	B-Li 60	A	4	Spic	Per	Shul 610	I	Torb E	D	10	49.5	Ros	36x5	36x10	Smi	Fir	7250	175
Clinton 90	4160	Buda YTU	4½x6	32.4	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 55	A	4	M-E	Row	Tim 1632 B	W	Tim 6666	F	8.75	46.8	Ros	36x6‡	36x6†	StM	.....	7410	190
Corbitt A22	....	Cont L-4	4½x5½	32.4	L	MeC	FS	Strm	V	Sim	Eis	.....	B-Li	B-Li 50	U	4	Hart	Shel	Shel 4FA20	W	Shel W-32	½	11.75	62.86	Ros	36x5	36x10	Smi	.....	7370	178
Day-Elder FN	....	Cont L-4	4½x5½	32.4	L	Bus	F	Zen	V	Mon	Eis	.....	B-Li	B-Li 51	U	4	Hart	Shel	Col 8513	W	Tim 6666	F	8.75	46.81	Gem	36x5	36x5†	Van	Fir	5600	165
Denby 27	3695	Cont L-4	4½x5½	32.4	L	Lng	F	Zen	G	Sim	Eis	.....	Full	Full H	A	4	Spic	Det	.....	I	.....	D	10	49.9	Ros	36x5	36x6†	Smi	Fir	7020	170
Fageol	5000	Wau DU	4½x6¼	32.4	L	.....	F	Zen	V	Wau	Spl	.....	B-Li	.....	...	7	Spic	Math	.....	W	.....	F	7.4	79	Ros	36x5	36x5	.....	.....	7300	172
Federal WL	....	Cont L-4	4½x5½	32.4	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	W-Gr	A	4	Spic	Math	Tim 1630B	W	Tim 6760	F	10.33	51.56	Gem	36x5	36x5†	Smi	Fir	7000	156
Garford 80	4200	Buda YTU	4½x6	32.4	L	Own	F	Strm	G	Sim	Spl	.....	Own	.....	A	4	Spic	Per	Tim 1630B	W	Tim 6666	F	10.33	59.5	Ros	36x5	36x5†	Smi	.....	7850	162
Gramm-Pioneer 40	3850	Hin HA200	4½x5½	32.4	L	Own	F	Strm	G	Hin	Eis	NE	Own	Own	A	4	Own	Per	Shel	W	Shel W31	½	10.25	50.6	Ros	36x5	36x5†	Smi	.....	7980	156
Hurlburt C	4150	Buda YTU	4½x6	32.4	L	Own	FS	Zen	G	Sim	Eis	.....	B-Li	Full H	A	4	Spic	Per	Tim 1730	W	Tim 6666	F	8.8	49.9	Ros	36x5	36x6†	Wau	.....	7300	170
Maccar M2	....	Wis VAU	4½x6	32.4	L	Own	F	Strm	V	Pier	Eis	Bos	B-Li	B-Li 55	A	4	Spic	Mer	Tim 1632B	W	Tim 6666	F	8.75	46.8	Ros	36x5‡	36x6†	Day	.....	7300	174
Perfection E-4½	4500	Cont B5	4¾x6	36.1	L	Mod	FS	Zen	V	Mon	Eis	.....	B.B.	Full H	A	4	Spic	Stan	Cont 1803	R	Huck 50	...	9.25	.....	Lav	36x5	40x14	Own	.....	8250	...
Pierce Arrow WC	4600	Own	4½x6¾	32.4	T	Own	F	Strm	P	....	Del	.....	Own	Own	A	4	Spic	SP	.....	W	Own	½	8.	.....	...	36:5	36x5†	.....	.....	8420	162
Republic 20	....	Cont L-4	4½x5½	32.4	L	Own	F	Strm	V	Phar	Bos	.....	Full	.....	U	4	Spic	Math	.....	I	Torb	D	10.	49.25	Jac	36x5‡	36x10‡	Smi	Fir	6700	165
Rowe HW	4500	Wis UAU	4¼x6	28.9	L	Fed	F	Zen	G	Sim	Bos	.....	B-Li	B-Li 55	A	4	Spic	Shel	Shel 4FA20	W	Shel W-31	½	8.7	35	Ros	36x5	36x6†	Hoo	.....	6370	156
Schacht	4400	Wis VAU	4½x6	32.4	L	Own	F	Zen	G	Dup	Bos	.....	B.B.	Own	A	4	Spic	Nat	Own	W	Own	F	10.66	66.5	Own	36x5	40x6†	StM	.....	7800	168
Schwartz 90	4160	Buda YTU	4½x6	32.4	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 55	A	4	M-E	Row	Tim 1632 B	W	Tim 6666	F	8.75	46.8	Ros	36x6‡	36x6†	StM	.....	8250	190
Service 81	....	Buda YBU-I	4½x6	32.4	L	Lng	F	Strm	V	....	Eis	.....	B.B.	B-Li 60	A	4	M-E	Shel	Tim 1630	W	Tim 6666	F	7.8	41.66	Ros	36x5	36x10	Stn	Opt	7810	173
Union H	3975	Wis VAU	4½x6	32.4	L	GO	F	Sheb	G	Dup	Eis	LN	Full	Full H	U	4	UP	Math	Shul 650	I	Torb E-1	D	10.25	49.2	Ros	36x6	36x10	Smi	Gdy	7700	174
Union HW	4500	Wis VAU	4½x6	32.4	L	GO	F	Sheb	G	Dup	Eis	LN	Full	Full HUI	A	4	UP	Math	Shul 650	R	Walk 5A	...	10.5	63	Ros	36x6	40x12	Smi	Gdy	7750	174
U. S., S	4075	Hin 200	4½x5½	32.4	L	Lng	F	Strm	V	Hin	Eis	Opt	B-Li	B-Li 50	A	4	Opt	Shel	Shel 4FA20	W	Shel W-32	½	10.25	49.6	Lav	36x5	36x5†	Sch	.....	7600	168
Wichita O	3500	Wau DU	4½x6¼	32.4	L	E-M	F	Strm	G	Wau	Bos	Own	Own	Own	A	4	Ther	Det	Shel	W	Shel W-30	½	Opt	Opt	Ros	36x5	36x5†	Smi	.....	6500	165
5 Ton																															
Acason M	4350	Wau EU	5 x6¼	40	L	.....	FS	Zen	V	Wau	Bos	.....	Det	Cott S	A	4	Bld	Det	Tim 1730-B	W	Tim 6760	F	10.25	53.3	Ros	36x6	40x6†	Smi	Opt	8970	187
Acme 125	....	Cont B-5	4¾x6	36.1	L	GO	FS	Rayf	V	Dup	Eis	Del	B.B.	Cott T	A	4	Bld	Det	Tim 1730B	W	Tim 6760	F	11.66	60.63	Ros	36x6	40x6†	Smi	.....	8976	180
American	4500	Wis	4½x6	32.4	L	GO	F	Strm	G	Pier	Apo	.....	Det	Cott R	A	4	Acm	SP	Sav 50-O	W	ThomDWM	F	10	.....	Lav	36x5	36x12	Ind	.....	8000	176
American-LaFrance 5R	....	Own	4¾x6	36.1	L	Bu	FS	Strm	G	Own	Spl	Wes	Own	Own	A	4	Own	Mer	Own	W	Own	...	10.	54.5	Own	36x6	40x6†	.....	.....	.....	165*
Atterbury 8E	4975	Cont B-2	4¾x6	36.1	L	Own	F	Zen	V	Con	Eis	.....	B-Li	B-Li 60	A	4	Spic	SP	Tim 1730B	W	Tim 6760	F	11.6	62.38	Gem	36x6	40x7†	Stn	.....	9496	167
Atterbury 8E-LWB	5125	Cont B-2	4¾x	36.1	L	Own	F	Zen	V	Con	Eis	.....	B-Li	B-Li 60	A	4	Spic	SP	Tim 1730B	W	Tim 6760	F	11.6	62.38	Gem	36x6	40x7†	Stn	.....	9816	192
Autocar L	4350	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7400	156
Autocar M	4200	Own	4¼x5½	28.9	L	Own	S	Strm	G	Phar	Bos	.....	Own	Own	A	4	Spic	Del	Own	R	Own	F	8.7	52.3	Ros	34x6	36x12	Hoo	.....	7200	120
Available H5	5375	Her T-3	5 x6	40	L	Chic	FS	Strm	V	Pier	Bos	.....	B-Li	B-Li 60	A	4	M-E	Tut	Tim	W	Tim 6760	F	11.3	60.65	Ros	36x6	40x12	Smi	.....	9500	190
Brockway T	....	Cont B-5	4¾x6	36.1	L	Bus	F	Strm	V	Phar	Eis	.....	B-Li	B-Li 60	A	4	Spic	Mer	Tim 1730B	W	Tim 6760	F	10.25	54.8	Gem	36x6	40x14†	Smi	.....	8800	174
Chicago D5	....	Her MU-3	4½x5½	32.4	L	Brm	F	Strm	G	Sim	Bos	.....	B-Li	B-Li 51-4	A	4	Pet	Math	Tim 1730	R	Huck 50	F	10.33	63.1	Gem	36x6	40x6†	Opt	.....	8500	157
Clinton 120L	4890	Buda BTU	5 x6½	40	L	Own	F	Zen	V	Phar	RBo	.....	B-Li	B-Li 60	A	4	M-E	Row	Tim 1732 B	W	Tim 6760	F	8.80	47.1	Ros	36x6‡	36x7†	StM	.....	9400	204
Clydesdale 4	....	Cont B-5	4¾x6	36.1	L	Own	F	Zen	V	Own	Bos	.....	B-Li	B-Li 60	A	4	Spic	Stan	Tim 1630B	W	Tim 6666	F	10.3	55.3	Ros	36x6	40x6†	.....	.....	.....	177
Corbitt AA-22	....	Cont B-5	4¾x6	36.1	L	McC	F	Strm	V	Sim	Eis	.....	B-Li	B-Li 60	A	4	Hart	Shel	Shel 4FA20	W	Shel W-51	½	10.25	49.6	Ros	36x6	40x6†	Smi	.....	9410	178
Day-Elder EN	....	Buda YTU	4½x6	32.4	L	Bus	F	Zen	V	Mon	Eis	.....	B-Li	B-Li 60	A	4	Hart	Shel	Tim 1732B	W	Tim 6760	F	10.25	54.84	Gem	36x5	40x6†	Smi	Fir	8400	170
Denby 210	4750	Cont B-5	4¾x6	36.1	L	Lng	F	Zen	G	Sim	Eis	.....	Full	Full H	A	4	Spic	Det	.....	I	Clark	D	12.5	62.7	Ros	36x6	40x6†	Cla	Fir	8590	170
Diamond T-EL	....	Hin	4½x5½	32.4	L	GO	F	Strm	V	Own	Bos	.....	Covt	.....	A	4	Spic	Math	.....	W	.....	F	11.66	59.11	Gem	36x6	40x6†	.....	.....	8625	180
Diamond T S	....	.....	4¾x6	36.1	L	GO	F	Strm	V	Own	Bos	.....	B-Li	.....	A	4	Spic	Math	.....	W	.....	F	11.66	56.43	Gem	36x6	40x6†	.....	.....	8750	180
Dixon	4490	Cont L-4	4½x5½	32.4	L	GO	FS	Zen	G	Pier	Bos	.....	Full	Full GU-8	U	4	Hart	IC	Vul 4F	W	Tim 6560	F	Opt	Opt	Ros	36x5	36x12	Smi	.....	7800	160
D-Olt B-5	4850	Mid 400	4½x6	32.4	H	Own	F	Zen	V	Sim	RBo	.....	B-Li	B-Li 60	A	4	Spic	SP	Tim 1730	W	Tim 6560	..	11.23	69	Ros	36x6	40x12	Smi	.....	8600	168
Fageol	5700	WAU DU	4½x6¼	32.4	L	.....	F	Zen	V	Wau	Spl	.....	B-Li	.....	...	7	Spic	Math	.....	W	.....	F	8.4	89	Ros	36x6	40x6†	Stn	.....	8300	172
Federal X-2	....	Cont B-5	4¾x6	36.1	L	Own	F	Zen	V	Phar	Eis	Rm	B.B.	W-Gr	A	4	Spic	.....	.....	W	.....	F	10.25	60	Gem	36x6	40x6†	.....	.....	8700	163

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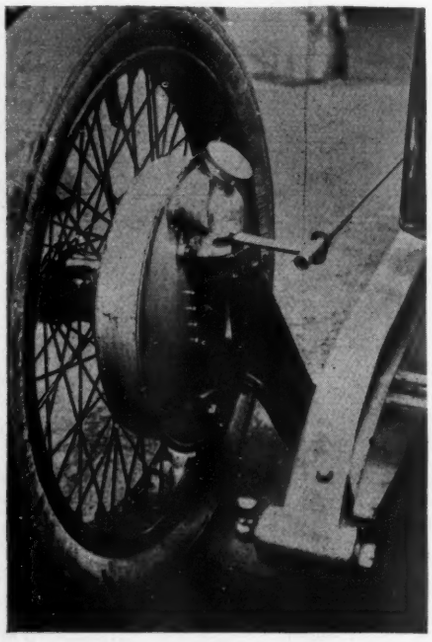
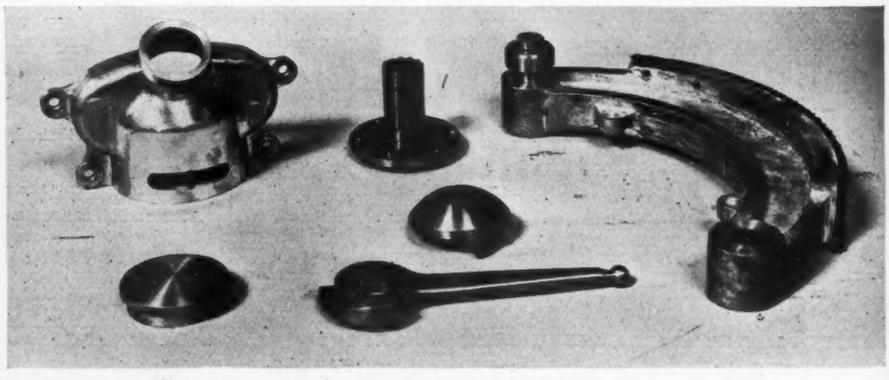
ELECTRIC COMMERCIAL CARS

Name and Model Number	Carrying Capacity	Chassis Weight—Exclusive of Battery	Chassis Weight—with Minimum Battery Capacity	Chassis Weight With Maximum Battery Capacity	Chassis Price	Maximum Speed	Location of Battery	Mileage Per Charge	Motor	Controller	Speeds Forward	Drive	Rear Axle	Springs	Front Tires	Rear Tires	Steering Gear	Wheelbase	Per Cent of Weight on Rear Wheels
C-T D-1	1000	2200	.....	.....	1700	14	A	55	G-E	Own	4	Own	Flot	Shel	36x3	36x3½	W	100	69
C-T B-1.5	1500	2300	.....	.....	2100	14	A	60	G-E	Own	4	Own	Flot	Shel	36x3	36x4	W	91⅝	65
C-T D-1.5	1500	2300	.....	.....	2100	14	A	60	G-E	Own	4	Own	Flot	Shel	36x3	36x4	W	116	71
C-T B-2	2000	2400	.....	.....	2350	14	A	50	G-E	Own	4	Own	Flot	Shel	36x3½	36x5	W	101	66
C-T D-2	2000	2400	.....	.....	2350	14	A	50	G-E	Own	4	Own	Flot	Shel	36x3½	36x5	W	124	70
C-T B-4	4000	4000	.....	.....	2800	12	A	50	G-E	Own	4	Own	Flot	Shel	36x4	36x4†	W	116	68
C-T C-6	6000	4300	.....	.....	3100	10	A	45	G-E	Own	4	I	D	Shel	36x4	36x4†	W	122	70
C-T C-7	7000	5000	.....	.....	3800	10	A	45	G-E	Own	4	I	D	Shel	36x5	36x5†	W	126	65
C-T A-7	7000	5800	.....	.....	4150	11	A	45	G-E	Own	4	I	D	Shel	36x6	36x4†	W	122	60
C-T A-10	10000	6500	.....	.....	4250	10	A	45	G-E	Own	4	I	D	Shel	36x7	36x5†	W	132	59
Kelland AT	1000	1950	3050	3550	.....	15	S	50	G-E	G-E	4	R	Flot	Mer	34x3	34x3	Ross	102	60
Kelland BT	1500	2050	3150	3950	.....	15	S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x3½	Ross	102	60
Kelland CT	2000	2150	3450	4050	.....	15	S	50	G-E	G-E	4	R	Flot	Mer	34x3½	34x4	Ross	102	60
Kelland AH	1000	2500	3600	4100	.....	15	A	45	G-E	G-E	4	C	D	Mer	36x3	36x3	Hin	106	60
Kelland BH	1500	2600	3700	4500	.....	15	A	45	G-E	G-E	4	C	D	Mer	36x3½	36x3½	Hin	106	60
Kelland CH	2000	2700	4000	4600	.....	15	A	45	G-E	G-E	4	C	D	Mer	36x3½	36x4	Hin	106	60
Lansden Century	1250	1700	.....	.....	1600	15	S	50	G-E	Own	4	R	Flot	SP	32x4½	32x4½	Lav	108	50
Lansden Century	2000	1950	.....	.....	1850	15	S	50	G-E	Own	4	R	Flot	SP	33x5	33x5	Lav	112	50
Lansden Marathon	2000	2900	.....	.....	1850	12	A	50	G-E	Own	4	C	D	SP	36x3½	36x4	KH	108	60
Lansden Marathon	4000	4400	.....	.....	2250	11	A	50	G-E	Own	4	C	D	SP	36x4	36x3½†	KH	120	60
Lansden ME	7000	5700	.....	.....	2950	10	A	45	G-E	Own	4	C	D	SP	36x5	36x5†	KH	133	60
Lansden MF	10000	7500	.....	.....	3350	9	A	40	G-E	Own	4	C	D	SP	36x6	36x6†	KH	146	60
O. B. A	2000	.....	.....	.....	2175	14	.....	.....	G-E	Own	...	C	D	.....	36x3½	36x4	Own	103	.....
O. B. B	4000	.....	.....	.....	2650	13	.....	.....	G-E	Own	...	C	D	.....	36x4	36x3½†	Own	107	.....
O. B. C	7000	.....	.....	.....	3750	11	.....	.....	G-E	Own	...	C	D	.....	36x5	36x4 †	Own	135	.....
O. B. D	10000	.....	.....	.....	3950	10	.....	.....	G-E	Own	...	C	D	.....	36x6	36x5 †	Own	143	.....
Steinmetz 10	1000	2000	.....	.....	.....	16	H&S	52	Diehl	Own	4	R	Russ	Shel	32x4½	32x4½	Lav	106	60
Steinmetz 15	1500	2300	.....	.....	.....	16	H&S	55	Diehl	Own	4	R	Russ	Shel	33x5	33x5	Lav	114	60
Walker 12	1000	1900	.....	.....	.....	15	.....	60	G-E	West	4	.....	Tim	Det	32x3	32x3½	Ross	104	66
Walker 15	1500	2600	.....	.....	.....	15	.....	60	West	West	5	Own	Own	Math	34x3	36x3½	Ross	94	66
Walker 22	2000	2800	.....	.....	.....	14	.....	60	West	West	5	Own	Own	Math	34x3½	36x4	Ross	101	66
Walker 42	4000	3800	.....	.....	.....	13	.....	60	West	West	5	Own	Own	Math	36x4	36x6	Ross	114	66
Walker N	10000	6400	.....	.....	.....	10	.....	50	West	West	5	Own	Own	Math	36x6	38x6†	Ross	141	66
Walker P	7000	5600	.....	.....	.....	11	.....	50	West	West	5	Own	Own	Math	36x5	38x5†	Ross	131	66
Walter HD	2000	2300	.....	.....	2200	16	A	60	Diehl	G-E	5	B	.....	.....	32x3½	32x4	Ros	98	60
Walter EN	4000	4400	.....	.....	3100	15	A	50	G-E	G-E	5	Own	D	.....	36x4	36x7	Gem	114	60
Walter EL	6000	5000	.....	.....	3700	13½	A	50	G-E	G-E	5	Own	D	.....	36x5	36x4	Gem	132	60
Walter ES	10000	7200	.....	.....	4500	12	A	50	G-E	G-E	5	Own	D	.....	36x6	40x6	Ros	150	70
Walter ER	14000	7500	.....	.....	4800	11	A	50	G-E	G-E	5	Own	D	.....	36x7	40x7	Ros	150	70
Ward WS 2	.....	1650	.....	.....	.....	14	S	75	G-E	Own	4	W	Shel	Shel	32x3	32x3½	Own	88	56
Ward WA	.....	2860	.....	.....	.....	13	A	52½	G-E	G-E	4	W	Shel	Shel	32x3½	34x4	Own	90	61
Ward WA 2	.....	2470	.....	.....	.....	13	S	72½	G-E	Own	4	W	Shel	Shel	32x3½	34x4	Own	90	61
Ward WB	.....	3850	.....	.....	.....	12½	A	50	G-E	G-E	4	W	Shel	Shel	34x4	36x5	Own	102	64
Ward WB 2	.....	3350	.....	.....	.....	12½	S	70	G-E	Own	4	W	Shel	Shel	34x4	36x5	Own	102	64
Ward WD	.....	4875	.....	.....	.....	11	A	50	G-E	G-E	4	W	Shel	Shel	36x5	36x7	Own	114	68
Ward WD 2	.....	4350	.....	.....	.....	11	S	60	G-E	G-E	4	W	Shel	Shel	36x5	36x7	Own	114	68
Ward WF	.....	7200	.....	.....	.....	10	A	40	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
Ward WF 2	.....	6450	.....	.....	.....	10	S	40	G-E	G-E	5	W	Shel	Shel	36x6	36x10	Own	132	70
Ward WH	.....	9400	.....	.....	.....	9	A	38	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	146	70
Ward WH 2	.....	8200	.....	.....	.....	9	S	38	G-E	G-E	5	W	Shel	Shel	36x7	40x12	Own	146	71
Ward WM	.....	2600	.....	.....	.....	12½	S	57½	G-E	Own	4	W	Shel	Shel	32x3½	32x4	Own	88	70
Ward WM 2	.....	2900	.....	.....	.....	12	S	70	G-E	Own	4	W	Shel	Shel	32x3½	32x5	Own	96	70

NOTE: Battery Equipment in all above makes is at the option of the purchaser. Battery Location Abbreviations: A—amidships; H—under hood; and S—under seat.





Views of a New French Front Brake Recently Introduced to This Country

The accompanying illustrations show an assembled and disassembled view of the new French front wheel brake recently brought to this country by William A. Schuyler, Fisk Bldg., 250 West 57th St., New York City. It is known in France as the Wattel brake. The claim is made that the brake is inexpensive to manufacture, kept in easy adjustment and subject to less wear than the conventional type of brake. The feature of this brake resides in the operating mechanism. A lever with a helical face cam is pivoted on a flanged stud mounted on top of the yoked axle end, co-axial with the knuckle pivot. This stud is provided with splines which correspond to spline slots in the bore of a piece capable of sliding along it. The lower edge of this sliding piece, by means of lateral extensions, rests on the helical surfaces of the cam, while its top part, which is of the form of the zone of a sphere, presses against rollers carried on the ends of the brake segments. By turning the brake operating lever the sliding piece can be raised or lowered, thus expanding or contracting the brake shoes. The whole mechanism is inclosed in a housing provided with a cap for the introduction of grease for lubricating. Deflection of the wheels for steering has no effect on the hold of the brake, as the contact points of the rollers describe a circle on the spherical zone. In order to adjust the brake after the lining has become worn, the sliding piece is turned around on its mounting through an angle corresponding to one spline.

Manufacturers and Models Included in Specifications on Preceding Pages

Also Manufacturers of Buses as Listed in the Bus Table

Acason—2, 2½, 3½, 5—The Acason Corp., Detroit, Mich.
★Acme—1, 1½, 2, 3, 3½ 4½, 6¼—Acme Motor Truck Co., Cadillac, Mich.
American—2½, 4, 5—American Motor Truck & Tractor Co., Portland, Conn.
★American La France—¾, 2, 3½, 5—American La France Fire Engine Co., Inc., Elmira, N. Y.
Armleder—1, 1½, 2½, 3½—O. Armleder Motor Truck Co., Cincinnati Ohio.
Atlas—1¼, 2—Atlas Truck Corp., Div. of Industrial Motor Corp., York, Pa.
★Atterbury—1½, 2½, 3½, 5—Atterbury Motor Car Co., Buffalo, N. Y.
★Autocar—1, 1¼, 1½, 2, 2½, 3, 4, 5 to 7—Autocar Co., Ardmore, Pa.
Available—1½, 2, 2½, 3½, 5—Available Truck Co., Chicago, Ill.
Avery—1—Avery Company, Peoria, Ill.
Belmont—1, 2, 3—Belmont Motors Corp., Harrisburg, Pa.
★Bessemer—1, 1½, 2½, 4—Bessemer Motor Truck Co., Grove City, Pa.
Bethlehem—1, 2, 3—Bethlehem Motors Corp.,Allentown, Pa.
Betz—7, 2½—Betz Motor Truck Co., Hammond, Ind.
Brinton—1½, 2½—Brinton Motor Truck Co., Philadelphia, Pa.
Brockway—¾, 1½, 2½, 3½, 5—Brockway Motor Truck Co., Cortland, N. Y.
Buffalo—2, 3—Buffalo Truck and Tractor Corp., Clarence, N. Y.
C. T.—1, 1½, 2, 3½, 5—Commercial Truck Co., Philadelphia, Pa.
Casco—1—Casco Motors, Inc., Portland, Maine.
Case—2—J. I. Case Plow Works Co., Racine, Wis.
Chevrolet—½, 1—Chevrolet Motor Truck Co. of Mich., Flint, Mich.
Chicago—1½, 2½, 3½, 5—Chicago Motor Truck, Inc., Chicago, Ill.
Clinton—1¼, 2, 3, 4, 5 to 7—Schwartz Motor Truck Corp., Reading, Pa.
Clydesdale—1¼, 2½, 3½, 5, 7—Clydesdale Motor Truck Co., Clyde, Ohio.
★Commerce—¾, 1½, 2½—Commerce Motor Truck Co., Detroit, Mich.
Concord—1, 2, 2½, 3—Abbott-Downing Truck & Body Co., Concord, N. H.
Corbitt—¾, 1, 1½, 2, 2½, 3, 4, 5—Corbitt Motor Truck Co., Henderson, N. C.
★Day-Elder—1, 1½, 2, 2½, 3½, 5—Day-Elder Motors Corp., Newark, N. J.
Defiance—Defiance Motor Truck Co., Detroit, Mich.
Denby—1¼, 2, 3, 4, 5—Denby Motor Truck Co., Detroit, Mich.
Diamond T—¾, 1¼, 1½, 2½, 3½, 5—Diamond T Motor Car Co., Chicago, Ill.
Dependable—1¼, 2, 2½, 3, 3½—Dependable Truck & Tractor Co., East St. Louis, Ill.
Diehl—1, 1½—Diehl Motor Truck Works, Philadelphia, Pa.
Dixon—1½, 2½, 3½—Dixon Motor Truck Co., Altoona, Pa.
Dodge—¾—Dodge Bros., Detroit, Mich.
D-Olt—1, 1½, 2, 2½, 5—D-Olt Motor Truck Co., Inc., Long Island City, N. Y.
Dorris—1, 2, 3½—Dorris Motor Car Co., St. Louis, Mo.
★Duplex—1, 1½, 2, 3½—Duplex Truck Co., Lansing, Mich.
Eagle—1¼, 2—Eagle Motor Truck Corp., St. Louis, Mo.
F. W. D.—3—Four-Wheel Drive Auto Co., Clintonville, Wis.
Fageol—2, 3, 4, 5—Fageol Motors Co., Oakland, Cal.
★Federal—¾, 1, 1½, 2, 3½, 5, T.T.—Federal Motor Truck Co., Detroit, Mich.
Fifth Avenue—Fifth Avenue Coach Co., New York City
Ford—1—Ford Motor Co., Highland Park, Mich.
Fulton—1, 2—Fulton Motors Corp., Farmingdale, N. Y.
★G. M. C.—1, 2, 3½, 5—General Motors Truck Co., Pontiac, Mich.
G. W. W.—1½—Wilson Truck Mfg. Co., Henderson, Ia.
★Garford—1, 1½, 2½, 4, 5, 7½—Garford Motor Truck Co., Lima, O.
Gary—1, 2, 2½, 3½, 5—Gary Motor Corp., Gary, Ind.
★Graham—1, 1½—Graham Brothers, Evansville, Ind.
★Gramm-Bernstein—1, 1¼, 1½, 2, 2½, 3½, 4, 5—Gramm-Bernstein Motor Truck Co., Lima, Ohio.
Gray—1—Gray Motor Corp., Detroit, Mich.
Harvey—2, 2½, 3½, 6, 10—Harvey Motor Truck Co., Harvey, Ill.
Hawkeye—1, 1½, 2½, 3½—Hawkeye Truck Co., Sioux City, Iowa.
Hug—1½, 2—The Hug Co., Highland, Ill.
Hurlburt—1½, 2½, 3½, 5, 7—Harrisburg Mfg. & Boiler Co., Harrisburg, Pa.
Independent—1, 1½, 2½—Independent Motor Truck Co., Inc., Davenport, Ia.
Indiana—1, 1½, 2, 2½, 3½, 5—Indiana Truck Corp., Marion, Ind.
★International—¾, 1, 1½, 2, 2½, 3, 5—International Harvester Co., of America, Chicago, Ill.
Jumbo—1½, 2, 2½ 3, 3½, 5—Nelson Brothers Co., Saginaw, Mich.
Kalamazoo—Kalamazoo Motor Corp., Kalamazoo, Mich.
Kearns—1, 1½, 2—Kearns-Dughie Motors Co., Danville, Pa.
Kelland—Kelland Motor Car Co., Newark, N. J.
Kelly-Springfield—1½, 2½, 3½, 6—Kelly-Springfield Motor Truck Co., Springfield, O.
Kenworth—1½, 2½, 3½—Kenworth Motor Truck Corp., Seattle, Wash.
Keystone—2—Keystone Motor Truck Corp., Oaks, Pa.
King Zeitler—¾, 1, 1½, 2½, 3½, 5—King Zeitler Co., Chicago, Ill.
Lange—2½, 3½—Lange Motor Truck Co., Pittsburg, Pa.
Lansden—¾, 1, 2, 3½, 5, 6—Lansden Company, Danbury, Conn.
Larrabee-Deyo—1, 1½, 2½, 3½,—Larrabee-Deyo Motor Truck Co., Inc., Binghamton, N. Y.
Lombard—T.T.—Lombard Auto Tractor Truck Corp., New York, N. Y.
Luedinghaus—1, 1½, 2—Luedinghaus-Espenschied Wagon Co., St. Louis, Mo.
Maccar—1¼, 1½,2, 3, 4, 5—Maccar Truck Co., Scranton, Pa.
Mack—1½, 2, 2½, 3½, 5, 6½, 7½, T.T.—Mack Motors, Inc., New York, N. Y.
Mason Road King—1—Durant Motors, Inc., Long Island City, N. Y.
★Master—1¼, 1½, 2½, 3½, 5, 5½—Master Motors Corp., Chicago, Ill.
Maxwell—1½—Maxwell Motor Co., Inc., Detroit, Mich.
Menominee—1, 1½, 1½, 2, 3½, 5—Menominee Motor Truck Co. Clintonville, Wis.
Moreland—1, 1½, 2, 3, 5—Moreland Motor Truck Co., Burbank, Cal.
Nash—1, 2—Nash Motors Co., Kenosha, Wis.
Nelson-LeMoon—1, 1½, 2½, 3½, 5—Nelson & LeMoon, Chicago, Ill.
Netco—2, 2½, 3—New England Truck Co., Fitchburg, Mass.
Niles—2½—South Main Motor Co., Pittsburgh, Pa.
O. B.—1, 2, 3, 5—O. B. Electric Vehicles, Inc., Long Island City, N. Y.
Ogden—1, 1½, 2½, 3½, 5—Ogden Truck Co., Chicago, Ill
Old Reliable—2½, 3½, 5, 6—Old Reliable Motor Truck Co., Chicago, Ill.
Oldsmobile—1—Olds Motor Works, Lansing, Mich.
Oneida—2, 2½, 3½, 5—Oneida Motor Truck Co., Green Bay, Wis.
Oshkosh—2, 2½—Oshkosh Motor Truck Mfg. Co., Oshkosh, Wis.
Overland—½—Willys-Overland Co., Toledo, O.
Parker—1, 1½, 3, 3½, 5—Parker Motor Truck Co., Milwaukee, Wis.
Patriot—1, 2, 3—Patroit Mfg. Co., Naveiock, Neb.
Penn—2—Penn Motors Corp., Philadelphia, Pa.
Perfection—¾, 1¼, 2, 3, 4½, 5—Perfection Truck Co., Minneapolis, Minn.
Phila. Motor Coach—Phila. Motor Coach Co., Phila., Pa.
★Pierce-Arrow—2, 3, 4, 5, 6, 7½, T.T.—Pierce-Arrow Motor Car Co., Buffalo, N. Y.
Pioneer—1—Pioneer Truck Co., Chicago, Ill.
Pittsburgher—2, 3, 3½—Pittsburgh Truck Mfg. Co., Pittsburgh, Pa.
Power—2½, 3½—Power Truck & Tractor Co., St. Louis, Mo.
Rainier—¾, 1, 1½, 2, 2½,3½, 5—Rainier Motor Corp., Long Island City, N. Y.
Reo—1¼—Reo Motor Car Co., Lansing, Mich.
★Republic—1¼, 2, 3, 4—Republic Motor Truck Co., Inc., Alma, Mich. Alma, Mich.
Reynolds—2, 3—Reynolds Truck Co., Mount Clemens, Mich.
★Rowe—2, 2½, 3, 4, 5—Rowe Motor Mfg. Co., Lancaster, Pa.
Ruggles—¾, 1¼, 2, 2½—Ruggles Motor Truck Co., Saginaw, Mich.
Rumely—1½—Advance-Rumely Thresher Co., Inc., La Porte, Ind.
Sandow—1, 1½, 2½, 3½, 5—Moses & Morris Motors Corp., Chicago Heights, Ill.
Sanford—1, 1½, 2½, 3½, 5—Sanford Motor Co., Syracuse, N. Y.
★Schacht—1½, 2, 3, 4, 5—G. A. Schacht Motor Truck Co., Cincinnati, O.
Schwartz—1¼, 2, 3, 4, 5 to 7—Schwartz Motor Truck Corp., Reading, Pa.
★Selden—1½, 2½, 3½, 5—Selden Truck Corp., Div. of Industrial Motor Corp., Rochester, N. Y.
★Service—¾, 1¼, 1½, 3, 3½, 4—Service Motor Truck Co., Wabash, Ind.
Signal—1, 1½, 2½, 3½, 5—Signal Truck Corp. Detroit, Mich.
★Standard—1¼, 1½, 2½, 3½, 5—Standard Motor Truck Co., Detroit, Mich.
Steinmetz—Steinmetz Electric Motor Car Corp., Arlington, Baltimore, Md.
Sterling—1½, 2, 2½, 3½, 5, 7½—Sterling Motor Truck Co., Milwaukee, Wis.
★Stewart—1, 1¼, 1½, 2½, 3½—Stewart Motor Corp., Buffalo, N. Y.
Stoughton—¾, 1½, 2, 3—Stoughton Wagon Co., Stoughton Wis.
★Super-Traction—1, 1½, 2, 3½, 3½—Super-Traction Co., Madison, Wis.
Super Truck—2½, 5—O'Connell Motor Truck Co., Waukegan, Ill.
Traffic—1½, 2, 3—Traffic Motor Truck Corp., St. Louis, Mo.
★Transport—1, 1½, 2, 3, 3½, 5—Transport Truck Co., Mt. Pleasant, Mich.
Traylor—1½, 2, 3, 5—Traylor Eng. & Mfg. Co., Cornwells, Pa.
Triangle—1, 1½, 2, 2½—Triangle Motor Truck Co., St. Johns, Mich.
Twin City—2, 3½—Minneapolis Steel & Machinery Co., Minneapolis, Minn.
Ultimate—1½, 2, 2½, 3, 5—Vreeland Motor Co., Inc., Newark, N. J.
Union—2½, 4—Union Motor Truck Co., Bay City, Mich.
★United—1, 1½, 2, 2½, 3½—United Motor Products Co., Grand Rapids, Mich.
U. S.—1¼, 1½, 2½, 3, 4, 5—United States Motor Truck Co., Cincinnati, Ohio.
Velie—1½—Velie Motors Corp., Moline, Ill.
Vim—¾—Vim Motor Truck Co., Philadelphia, Pa.
★Walker—½, 1, 2, 3½, 5—Walker Vehicle Co., Chicago, Ill.
Walter—2, 2½, 5, T.T.—Walter Truck Co., New York, N. Y.
★Ward—¼, 1, 2, 3½, 5—Ward Motor Vehicle Co., Mt. Vernon, N. Y.
Ward La France—2½, 3½, 5—Walker Motors, Inc., New York, N. Y.
★White—¾, 2, 3½, 5—White Co., Cleveland, Ohio.
Wichita—1, 2, 3, 4—Wichita Falls Motor Co., Wichita Falls, Texas.
Wilcox—1, 1½, 2½, 3½, 5—Wilcox Trux, Inc., Minneapolis, Minn.
Witt-Will—1½, 2, 2½, 3—Witt-Will Co., Inc., Washington, D. C.
Yellow Cab—¾, 1¼—Yellow Cab Mfg. Co., Chicago, Ill.

★Indicates Advertisers. See Advertisers' Index.

Detailed Motor

These Tables Consist Only of Specifications Received Directly From the Manufacturer. Listed Are Either Specially Designed Bus

Line Number	TRADE NAME AND NUMBER	Capacity Seats	Chassis Price	UNLOADED WEIGHT (In Pounds)			GENERAL DIMENSIONS								ENGINE DETAILS									NORMAL SPEED M.P.H.	
				Chassis Only	Chassis and Body	Recommended Body Weight	Wheelbase	Tread, Front	Tread, Rear	Floor Height	Turning Radius	Over-All Length	Over-All Width	Clearance from Ground	Make and Model Number	Bore and Stroke	Horsepower	Valve Arrang'mt	Fuel Feed	Lubrication	Carburetor (Make)	Radiator (Make)	Ignition System	High	Low
															1			2	3	4	5	6	7		
1	Acme K	30	....	6900	9900	3000	200	58½	74	27	38	312	90	5	Cont 6B	3¾x5	33.7	L	V	F	Zen	Own	Eis	30	5.7
2	Avery	18	....	2800	4000	.....	129	56	56	32	42	.....	.....	.....	Own 6	3 x4	21.6	L	V	S	Strm	Own	KW	20	6
3	Belmont	30	....	5000	7200	2200	184	.....	.....	20	27	262	86	9	Buda EBU	4¼x5½	28.9	L	V	F	Zen	Own	Bos	25	3
4	Bethlehem KN	16	1385	2650	.....	800	125	56	56	....	26	175	64⅞	....	Own	3½x5	19.6	L	V	F	Zen	GO	Bos	35	....
5	Bethlehem GN	25	2185	4100	.....	1200	138	56	57¼	....	25	208¼	66¼	....	Own	4 x5¼	25.6	L	V	F	Zen	GO	Bos	25	....
6	Bethlehem HN	35	2985	5250	.....	1500	145	56	59½	....	26	226¼	70	....	Own	4 x5¼	25.6	L	V	F	Zen	GO	Bos	25	....
7	Brinton	25	3400	.....	.....	.....	Op	58	58	36	30	Op	....	12	Cont	4½x5½	32.4	L	G	F	Strm	Chic	Bos	....	....
8	Brockway	25	....	6400	9530	2880	185	66½	71	28½	31⅗	295¼	84	10	Buda YBU	4½x6	32.4	L	V	F	Zen	GO	Bos	25	5
9	Brockway	30	....	6400	9530	3180	197	66½	71	28½	31⅗	324¼	84	10	Buda YBU	4½x6	32.4	L	V	F	Zen	GO	Bos	25	5
10	Day-Elder 20	20	....	3950	.....	2500	168	56	58	32	30	237	70½	10½	Buda HTU	4¼x5½	28.9	L	V	F	Zen	Bus	Eis	35	10
11	Day-Elder 25	25	....	5000	.....	3000	180	58	58½	32	27	260	75½	10	Buda HTU	4¼x5½	28.9	L	V	F	Zen	Bus	Eis	35	7
12	Day-Elder 30	30	....	6000	.....	3500	192	68½	74	25	25	271½	90	7	Buda YBU	4½x6	32.4	L	V	F	Zen	Bus	Eis	35	7
13	Defiance GL-3	19	....	.....	.....	.....	140	56	56	28	....	210	84	8	Cont 8 R	3⅜x4½	27.3	L	V	...	Zen	Chic	Bos	30	5
14	Denby 188	26	....	6540	.....	.....	188	70	70	22	61	287	82	9½	Cont 6B	3¾x5	33.7	L	V	F	Zen	Lng	Bos	47	9
15	Denby 216	30	....	6860	.....	.....	216	70	70	22	73	287	82	9½	Cont 6B	3¾x5	33.7	L	V	F	Zen	Lng	Bos	47	9
16	Fageol Inter City	22	....	.....	8700	.....	218	70	70	21	38	306	....	7½	HS 50	4¼x5½	28.9	H	V	F	Zen	Lng	Del	35	6
17	Fageol Street Car	29	....	.....	9600	.....	218	70	76½	20	38	312	89	7½	HS 50	4¼x5½	28.9	H	V	F	Zen	Lng	Del	30	7
18	Federal	18	....	.....	.....	1800	160	56	59½	28	28	238½	....	10	Cont 6M	3⅜x4½	27.3	L	V	F	Zen	Lng	Eis	35	7
19	Federal	25	....	.....	.....	2500	190	60	60	30	28	266⅜	....	10	Cont 6B	3¾x5	33.7	L	V	F	Zen	Mod	Eis	35	6
20	Fifth Avenue J	29	....	5660	8235	2575	172	67⅝	71½	32	31	277	87½	7	Yellow	4 x6	38.4	S	V	F	Zen	Eis	Own	30	7.5
21	Ford	....	....	.....	.....	.....	123	56	56	.....	.....	.....	.....	.....	.....	3¾x4	22.5	L	G	S	Hol	Own	Own	30	3
22	F. W. D. B	29	4200	6500	10000	.....	156	56	56	42	30	.....	.....	.....	Wis A	4¾x5½	36.1	T	V	F	Strm	Lng	Eis	22	....
23	Garford 51D	29	4350	6300	9400	3100	189	68	72	28½	30	295	91	7	Buda YBU	4½x6	32.4	L	V	F	Strm	Own	Rm	35	5
24	Garford 226	25	3750	4350	6750	2400	181	56	65	32	25	262	76	9½	Buda EBU	4¼x5½	28.9	L	V	F	Strm	Own	Spl	35	5.4
25	Graham CA	16	1325	2625	4250	1600	140	56	56	34	24½	234	77	10½	Dodge	3⅞x4½	24.1	L	V	S	Stew	McC	NE	25	....
26	Indiana 20	22	....	5300	8900	3600	174	60	68	35	29	252¾	89½	9½	Own 38	4⅛x5½	27.2	L	V	F	Strm	McC	Eis	23	6
27	Indiana 25	26	....	5850	9950	4100	192	60	68	35	32	279¾	89½	9½	Own 38	4⅛x5½	27.2	L	V	F	Strm	McC	Eis	23	6
28	International S	14	....	2750	3500	750	124	56	56	....	20	.....	.....	.....	Lyco KB	3½x5	19.6	L	G	FS	Ens	Lng	Con	25	5
29	Jumbo	25	....	6000	8500	2800	204	60	72	27	....	260	84	8	Buda EBU	4¼x5½	28.9	L	V	F	Zen	GO	Eis	25	8
30	Kissel	18	....	5200	7780	2400	202	64½	66	24	....	252	76	8	Own 4-36	4¼x5½	28.9	L	V	S	Strm	Spar	Bos	40	....
31	Larrabee X 2	14	....	3350	4750	.....	155	56	56	29	28	216	70	11	Cont 8R	3⅜x4½	27.3	L	V	F	Zen	Fed	Bos	40	4
32	Larrabee XJ 2	21	....	4300	6100	.....	168	57	62	29	34	250	90	9	Cont 8R	3⅜x4½	27.3	L	V	F	Zen	Fed	Bos	30	3
33	Luedinghaus	..	2890	4400	5600	1200	170	....	58	44	.....	.....	.....	11¾	.....	4¼x5¾	28.9	L	G	S	Sheb	Brm	Spl	20	3
34	Mack AB	25	4435	6075	9075	3000	195	58½	60¼	31¾	37½	300	88	9½	Own	4¼x5	28.9	L	V	FS	Zen	Own	Spl	21	4.5
35	Mason	21	1320	3100	5800	2700	150	56	56	30	....	246	85	10	Her O	4 x5	25.6	L	G	F	John	Fed	AuL	35	12
36	Master JDB	22	....	5600	8900	3300	170	59	59	26	29½	.....	.....	.....	Buda GBU	4 x5¼	25.6	L	V	FS	Zen	Chic	Eis	25	6
37	Master DDB	30	....	6000	9500	3500	194	59	59	26	33½	.....	.....	.....	Buda EBU	4¼x5½	28.9	L	V	FS	Zen	Chic	Eis	25	5
38	Menominee DB	25	....	5900	9100	3200	186	68	73	26	30	256	86	10	Wis TAU	4 x6	25.6	L	V	F	Strm	Own	.....	32	6
39	Moreland RC	16	2280	3850	5850	2000	180	56	57¼	23½	.....	.....	.....	7	Her O	4 x5	25.6	L	G	F	Zen	Own	Spl	25	....
40	Moreland EC	..	3780	4590	7590	3000	178	61	58	24½	.....	.....	.....	8½	Cont K4	4⅛x5¼	27.3	L	V	F	Strm	Own	Spl	25	....
41	Moreland AC	25	4700	5660	9160	3500	187	68	69	25½	.....	.....	.....	9	Cont L4	4½x5½	32.5	L	V	F	Strm	Own	Spl	25	....
42	Olds	....	....	2390	.....	.....	128	56	56	.....	.....	.....	.....	10½	Own T	3 11/16x5¼	21.7	H	V	FS	Zen	Har	Rm	25	....
43	Parker B 23 B	16	1400	2700	4600	2000	131	58	58	30	21	204	66	10	Buda WTU	3¾x5⅛	22.5	L	V	F	Zen	Own	Wes	35	9
44	Parker R 24 B	18	2500	3600	5800	2100	150	58	58	28	25	218	66	10	Wis SU	4 x5	25.6	H	V	F	Strm	Own	Wes	40	10
45	Phila. Motor Coach P	65	6500	8750	14650	5900	216	64½	75	20⅛	35	334½	90	8	Own 6 cyl.	4 x6	38.4	H	V	F	Zen	GO	NE	25	....
46	Ruggles Chanticleer	16	1445	3000	5000	.....	138	56	56	28	27	206	73	10¾	Her O	4 x5	25.6	L	V	F	Strm	Per	Rm	35	8
47	Schwartz 65 B	35	4075	5925	8700	2775	184	58½	58½	30	37	270	75½	9½	Buda EBU	4¼x5½	28.9	L	V	F	Zen	Own	Bos	30	3
48	Selden	..	4850	7200	10200	3000	195	68	74	29⅛	33	309	91	7	Cont L4	4½x5½	32.4	L	V	F	Zen	Lng	Eis	25	6.27
49	Service 61B	40	....	5850	.....	.....	192	58	66	30	24	276½	80	8½	Buda EBU	4¼x5½	43.4	L	V	F	Strm	McC	Eis	25	4.5
50	Service 25B	20	....	3600	.....	.....	159	56⅝	57⅛	28	18	221	65⅝	8	Buda WTU	3¾x5⅛	33.8	L	V	F	Opt	Lng	Rm	35	6
51	Sterling GB1	21	4050	4800	7000	2200	156	56	58	29⅜	....	234	70⅜	10	Own	4 x5¾	25.6	L	V	F	Zen	Own	Eis	28	....
52	Sterling GB2	29	4575	5700	8500	2800	174	60¼	58½	29⅜	....	263	75½	10	Own	4⅜x5¾	30.6	L	V	F	Zen	Qwn	Eis	28	....
53	Stoughton AS	16	2400	3300	5520	2220	162	56	56	30	27	224	80	11¼	Mid 412	3⅝x5	31.5	H	V	F	Zen	Chic	Rm	34	8.5
54	Stoughton DS	24	....	4890	.....	.....	180	56	60	.....	.....	246	34	9¾	Mid 402	4⅛x5¼	40.8	H	G	F	Zen	Own	Rm	26	5
55	Triangle E	20	2995	4500	7000	2200	168	58	58	29	30	276	75	10	Wau Y	4 x5¼	25.6	L	V	F	Strm	Whe	Eis	35	6.54
56	Union FWC	30	....	6000	10100	4100	200	64½	62	29	....	316	95	....	Wis TAU	4 x6	25.6	L	V	F	Sheb	GO	Eis	30	....
57	United 30 B	..	....	3000	4500	1500	173	56	56	.....	.....	.....	.....	.....	Her	4 x5	25.6	L	V	F	Zen	Per	Bos	45	5
58	U. S. No. 301	18	1875	3200	5700	.....	138	56	56	29	22	212	70	9¾	Buda WTU	3¾x5⅛	22.5	L	V	F	Strm	Lng	Bos	35	9
59	U. S. No. 201	18	1875	3200	5700	.....	138	56	56	29	22	212	70	9¾	Buda WTU	3¾x5⅛	22.5	L	V	F	Strm	Lng	Bos	35	9
60	U. S. No. 202	26	2225	3800	6500	.....	162	58	56	31	28	267	88	10½	Buda WTU	3¾x5⅛	22.5	L	V	F	Strm	Lng	Bos	30	8
61	White 50A	26	4950	5395	.....	.....	198	58½	60⅜	28¼	36	276	74	....	Own	4¼x5¾	28.9	L	V	F	Zen	.....	.....	.....	.....

NOTE: Manufacturers and addresses of above listed on page 49.

KEY OF

ENGINE:
Beav—Beaver
Buda
Cont—Continental
GBS—Golden, Belknap & Swartz
Gr-B—Gray-Beal
Her—Hercules
Hin—Hinkley
H-Sp—Herschell-Spillman
1 HS—Holl Scott
LeR—Le Roi
Lib—Liberty
LMF—Light Mfg. & Fdy.
Lyco—Lycoming
Mid—Midwest
Mol-Moline
Sup—Supreme
Wau—Waukesha
Wei—Weidely
Wis—Wisconsin

VALVE ARRANGEMENT:
H—Overhead
L—ELL Head
2 S—Sleeve
T—TEE-Head

FUEL FEED:
G—Gravity
3 P—Pressure
V—Vacuum

LUBRICATION:
FS—Force and Splash
4 F—Force Feed
S—Splash

CARBURETOR:
Bent—Bennett
Cart—Carter
Eag—Eagle
Ens—Ensign
Hol—Holly
John—Johnson
King—Kingston
5 Mar—Marvel
Mas—Master
Mill—Miller
Rayf—Rayfield
Scoe—Scoe
Strm—Stromberg
Sheb—Schebler
Stew—Stewart
Till—Tillotson
Zen—Zenith

RADIATOR (MAKE):
BW—B & W
Brm—Brenem
Bus—Bush
Can—Candler
Chic—Chicago
Eag—Eagle
6 EM—English-Mersick
Eur—Eureka
Fed—Fedders
Flex—Flexo
GO—G. & O.
Har—Harrison
Hoo—Hooven
Idl—Ideal
Jam—Jamestown
Kue—Kuenz
Liv—Livingston
Lng—Long
McC—McCord
May—Mayo
Mod—Modine
Per—Perfex
R-T—Rome-Turney
SJ—Shotwell Johnson
Spar—Sparton
Spec—Special
Spli—Splitex
Stn—Standard
Whe—Wheeler

IGNITION SYSTEM:
Amr—American Swiss
Apo—Apollo
AtK—Atwater Kent
AuL—Auto-Lite
Ber—Berling
Bos—Bosch
Con—Connecticut
Del—Delco
7 Eis—Eisemann
Kin—Kingston
KW—K. W. Ignition Co.
Lor—Louraine
NE—North East
POL—Prest-O-Lite
Rm—Remy
RBo—Robert Bosch
Sim—Simms
Spl—Splitdorf
Tea—Teagle
Wag—Wagner
Wes—Westinghouse

BATTERY (MAKE):
Exi—Exide
Gl—Globe
Gld—Gould
8 Hob—Hobbs
POL—Prest-O-Lite
USL—U. S. Light & Heat
Wes—Westinghouse
Wil—Willard

ENGINE STARTER:
AC—Allis-Chalmers
AK—Atwater Kent
AuL—Auto-Lite
Bj—Bijur
Bos—Bosch
Del—Delco
9 Dy—Dyneto
GD—Gray & Davis
LN—Leece-Neville
NE—North East
Rm—Remy
Sim—Simms
USL—U. S. L.
Wes—Westinghouse
Wg—Wagner

GENERATOR:
Bos—Bosch
Wes—Westinghouse
Rm—Remy
10 Bj—Bijur
NE—North East
AuL—Auto-Lite
Dy—Dyneto
Eis—Eisemann
Del—Delco
LN—Leece-Neville
GD—Gray-Davis
Spl—Splitdorf

CLUTCH (MAKE):
B.B—Borg & Beck
B-LI—Brown-Lipe
Covt—Covert
Det—Detlaff
DG—Detroit Gear & Mach.
11 Dod—Dodge
Full—Fuller
Hart—Hartford
Hoos—Hoosier
HS—Hele-Shaw
M-E—Merchant & Evans
Mun—Muncie
T-D—Twin Disc
W-Gr—Warner Gear

GEARSET:
B-LI—Brown-Lipe
Cott—Cotta
Covt—Covert
Det—Detroit
Dod—Dodge
12 Dun—Dundore
Durs—Durston
Full—Fuller
G-Le—Grant Lees
MM—Mechanics Mach. Co.
Mun—Muncie
W-C—Warner Corporation
W-Gr—Warner Gear

All Manufacturers Producing Motor Bus Chassis Not Represented

Bus Specifications

Every Commercial Car Manufacturer in the Country Was Solicited and the Jobs Chassis or Those Recommended for This Service

Line Number	ELECTRICAL EQUIPMENT					TRANSMISSION				UNIVERSAL (Make)	SPRINGS (Make)	BRAKES (See Note)	FRONT AXLE	REAR AXLE			TOTAL GEAR REDUCTION IN HIGH	TOTAL GEAR REDUCTION IN LOW	STEERING GEAR (Make)	TIRES, WHEELS, RIMS			
	Battery (Make)	Model No.	Volts and Amp. Hr.	Starter (Make)	Generator (Make)	Clutch (Make)	Make and Model Number of Gearset	Location	Speeds				Make and Model Number	Final Drive	Make and Model Number	Type				*Pneumatic †Dual Pneumatic ‡Solid Front	Rear	Wheels (Make)	Rim Equipment
	8			9	10	11	12	13		14	15	16	17	18	19	20	21					22	23
1	Wil	SJRT4	6–111	Del	Rm	B.B.	Cott RU	U	4	Bld	Det	A	1540 B	W	6511 S	F	6.8	35.36	Ros	38x7*	36x6†	Bim	Fir
2	.....	.....	.....	Wes	Wes	Own	Own	U	3	Pet	Math	.....	Own	I	Own 2-L	D	8.	26.66	Ros	34x5*	34x5*	StM	Gdy
3	USL	Spec	12-175	Bos	LN	B-Li	B-Li 55	U	4	Spic	Math	A	Tim 1550	W	Tim 6511	...	6.1	.....	Ros	34x7*	34x7*	E&O	Fir
4	POL	613SHC	.....	GD	GD	B.B.	Det	U	3	Spic	Math	A	Stan 3070	S	Eat 1000	½	6.86	21.3	Ros	.....	.....	.....	Fir
5	POL	613 SHC	.....	GD	GD	B.B.	Det	U	3	UP	Math	A	Shel 33FA500	R	Wis 66A	½	7.75	24.8	Lav	.....	.....	.....	Fir
6	POL	613SHC	.....	GD	GD	Full	Full	U	4	UP	Math	A	Shel D 343	R	Wis 88E	½	8.67	41.56	Lav	.....	.....	Smi	Fir
7	Exi	.....	.....	Del	.....	B-Li	B-Li 50	U	4	Spic	Phil	A	Tim	W	Tim	...	Opt	Opt	Ros	Opt	Opt	Hoo	.....
8	Exi	.....	12	LN	LN	B-Li	B-Li 55	A	4	M-E	Mar	B	Shul 610 B	I	Clark 3DSp	D	7.	37.45	Gem	.....	.....	Bud	Fir
9	Exi	.....	12	LN	LN	B-Li	B-Li 55	A	4	M-E	Mar	B	Shul 610B	I	Clark 3DSp	D	7	37.45	Gem	.....	.....	Bud	Fir
10	Wil	SJRT 6	6–153	Bos	Bos	B-Li	B-Li 35	U	3	Hart	Shel	A	Col 7018	W	Tim 6460	½	6	20.2	Gem	36x6	36x7	.....	Fir
11	Wil	SJRT 6	6–153	Bos	Bos	B-Li	B-Li 51	U	4	Hart	Shel	A	Col 8513	W	Tim 6560	F	6.8	36.4	Gem	36x6	40x8	.....	Fir
12	Wil	SJRT 6	6–153	Bos	Bos	B-Li	B-Li 51	U	4	Sned	Shel	A	Shul 610	W	Tim 6511S	F	6.8	36.4	Gem	36x6	36x6†	.....	Fir
13	Wil	SJRT 4	6	Bos	Bos	Full	Full SU 1	U	3	Spic	Det	A	Col 7000	B	Eat 1000	F	6.14	.....	Lav	32x6*	34x7*	StM	Fir
14	Wil	.....	6–200	Bos	Bos	B-Li	B-Li	U	4	UP	Det	A	Shul	I	Clark	D	.....	.....	Ros	36x6*	36x6†	Bud	Fir
15	Wil	.....	6–200	Bos	Bos	B-Li	B-Li	U	4	UP	Det	A	Shul	I	Clark	D	.....	.....	Ros	36x6*	36x6†	Bud	Fir
16	Exi	.....	.....	Del	Del	B-Li	B-Li 50	U	4	Spic	Math	A	Tim 1524	W	Tim Spec	F	4.6	19.7	Ros	36x6*	38x7	Bud	.....
17	Exi	.....	.....	Del	Del	B-Li	B-Li 50	U	4	Spic	Math	A	Tim 1524	W	Tim Spec	F	4.6	19.7	Ros	36x6*	36x6†	Bud	.....
18	Exi	3LXRE-25	6–185	Rm	Rm	B.B.	Own	A	4	Opt	Math	A	Own	W	Tim 6460	½	5.2	26.	Gem	32x6*	34x7*	Smi	Fir
19	Exi	3LXRE-25	6–185	Rm	Rm	B.B.	Det R	A	4	Opt	Math	A	Own	W	Tim 6560	F	6.75	39.8	Gem	32x6*	36x8*	Smi	Fir
20	Wil	STRN27	12–90	.....	NE	Own	Own	A	4	Sned	Math	A	Tim 1523	W	Tim 6412	½	5.4	21.6	Ros	34x4	34x6	.....	.....
21	Own	.....	6–80	Own	Own	Own	Own	U	..	Own	Own	B	Own	B	Own	½	7.25	.....	Own	.....	.....	Own	Opt
22	Wil	.....	12–85	NE	NE	HS	Cott	A	3	Bld	Tut	B	Own B	B	Own B	F	7.35	29.	Ros	.....	.....	Sch	Fir
23	Wil	STRN 6	6–190	AtK	Rm	Own	Own	A	4	Spic	Per	B	Tim 1550	W	6511 B	F	6.	.....	Ros	36x6*	36x6†	Day	Fir
24	Exi	3XC-15-1	6–175	AtK	AtK	Own	Own	A	4	Spic	Per	A	.....	W	Tim 6460	½	4.85	.....	Ros	32x6	32x6†	Bud	Fir
25	Exi	9318	12–50	NE	NE	Own	Own	U	3	.....	.....	A	Own	B	Own	...	6.29	26.23	Own	33x4½*	36x6*	.....	.....
26	Wil	STRN 6	6–157	Wes	Rm	B.B.	B-Li	A	4	.....	Shel	A	Shel D 370	W	Shel W 103	½	6.05	25.5	Woh	36x6*	36x6†	Bud	Fir
27	Wil	STRN 6	6–157	Wes	Rm	B.B.	B-Li	A	4	.....	Shel	A	Shel D 370	W	Shel W 21	½	6.05	25.5	Woh	36x6*	36x6†	Bud	Fir
28	POL	613RHN	6–100	AuL	AuL	Mun	Mun	U	3	.....	SS	A	Own	I	Torb	D	6.3	25.2	CAS	32x4½*	32x4½*	.....	.....
29	Exi	.....	6–120	NE	NE	Full	B-Li	U	4	Spic	Math	B	Shul 610S	I	Clark	...	8	33	Jac	36x6*	36x6†	Ind	Fir
30	Wil	SJRT 6	6–153	Rm	Rm	B-Li	B-Li 35	U	4	Spic	Math	A	Shul 610	R	Wis 60B	...	5.8	19.08	Ros	34x7*	34x7*	Whit	Gdy
31	Exi	3XE-D	6	Bos	Bos	B-Li	B-Li 30	U	3	Sned	Shel	A	Sals	B	Sals	¾	5.9	25.	Gem	34x5*	34x5*	Bud	Fir
32	Exi	3XE-D	6	Bos	Bos	B-Li	B-Li 30	U	3	Spic	Shel	A	Shel	W	Shel	½	7.6	31.	Gem	36x6*	36x6*	Smi	Fir
33	Exi	.....	6–150	Dy	Dy	B.B.	Det	U	3	Spic	Tut	A	Shul 510	W	Wis	½	Opt	42.	Lav	36x6*	40x8*	Bim	Fir
34	Exi	6LXRE13	12-120	LN	LN	Own	Own	U	4	Spic	Mer	B	Own	R	Own	F	6.67	32.3	Own	34x5	34x5†	Jon	.....
35	USL	.....	6–120	AuL	AuL	Hoos	W-Gr	A	3	Spic	Arm	A	Fli	B	Fli	F	Opt	.....	Lav	33x5*	33x5†	Imp	Fir
36	Wil	.....	12	Wes	Wes	Full	Full TU 3	U	3	Spic	Det	B	Shul 610	R	Walk 2 A	F	7.25	22	Ros	36x6*	40x8	StM	Fir
37	Wil	.....	12	Wes	Wes	Full	Full GU 7	U	4	Spic	Det	B	Shul 610	R	Walk 25 A	F	7.66	37	Ros	36x6	40x8	StM	Fir
38	Wil	SJR4	6–125	Bos	Bos	Det	Cott AU	U	4	Spic	Tut	A	Tim 1550	R	Wis 120 K	½	6.16	32.06	Ros	36x6*	36x6†	Ind	Fir
39	Hob	6HTXR15A	6–140	AuL	.....	B-Li	B-Li 30	U	3	Pet	US	A	Tim 1250	B	Tim 5512	½	5.5	22	Ros	32x6	32x6	Own	Gdy
40	Hob	6HTXR15A	6–140	Opt	Spl	B-Li	B-Li 51	U	4	Pet	US	A	Tim 1550	W	Tim 6410	½	6.	32.1	Ros	34x5*	34x5†	Bud	.....
41	Hob	6HTXR15A	6–140	Opt	Spl	B-Li	B-Li 51	U	4	Pet	US	A	Tim 1550	W	Tim 6511	F	6	32.1	Ros	36x6*	36x6†	Bud	.....
42	Wil	SJR4	6–80	AuL	Au-L	B.B.	Mun	U	3	Spic	Per	A	Torb	I	Torb	D	6.5	10.03	Jac	35x5*	35x5*	AuW	Jax
43	Gl	611	6–80	Wes	Wes	Full	Full SU 2	U	3	.....	Tut	A	Fli 72BA80	B	Fli 72BA10	F	5.5	22.	Lav	32x6*	32x6*	Whit	Fir
44	Gl	611	6–80	Wes	Wes	Full	Full SU 2	U	3	.....	Tut	A	Cont 600	B	Fli 72BA10	F	4.9	20.	Lav	32x6*	32x6*	Whit	Fir
45	.....	.....	12180	NE	NE	B-Li	B-Li	A	4	Spic	Shel	A	Shul	I	Atl	D	7.	28.	Ros	34x6‡	34x6†	Ind	.....
46	POL	613RHN	6–100	Rm	Rm	B-Li	B-Li 30	U	3	Spic	Det	A	Col 5000	B	Col 52000	¾	5.13	21.	Jac	34x5*	34x5*	Nor	Fir
47	POL	611SHC	6–90	Bos	Bos	B-Li	B-Li 55	A	4	M-E	Row	A	Tim 1544 B	W	Tim 6560	F	6.5	34.8	Ros	36x6*	36x6*	Bud	Fir
48	POL	615 KPN	6–200	NE	NE	B-Li	B-Li	A	4	Spic	SS	A	Tim	W	Tim	F	7.75	31.	Gem	36x5	36x5	Arc	Fir
49	Wil	SJRT 6	6–166	Rm	Rm	B.B.	B-Li 51	U	4	Opt	Shel	A	Tim 1544	W	Tim 6560	F	6.75	36.12	Ros	32x6*	32x6†	Opt	Fir
50	Wil	SJRT 4	6–120	Rm	Rm	B–Li	B-Li 31	U	3	M-E	Shel	A	Shul 312	B	Eat 1500	½	6.85	32.8	Ros	30x5	32x6	Opt	Fir
51	Gld	ASLR632	6–81	Bos	Bos	B-Li	B-Li 35	U	4	Spic	Math	A	Tim 1452	W	Tim 6460	½	6	32	Ros	35x5*	35x5†	Bud	Fir
52	Gld	ASLR632	6–81	Bos	Bos	B-Li	B-Li 50	U	4	Spic	Math	A	Tim 1544 B	W	Tim 6560	F	6	32	Ros	36x6*	36x6†	Bud	Fir
53	Wil	SJRN 3	6	Rm	Rm	B-Li	B-Li 30	U	3	Pick	Own	A	Col 5000	B	Col 52000	¾	5.87	21.9	Ros	34x5*	36x6*	Bim	Gdy
54	Wil	SJAT-3	6–90	Rm	Rm	B-Li	B-Li 35	U	4	Pick	Own	B	Shel D 343	W	Shel W 103	½	8.6	46.3	Ros	34x5*	40x8*	Bim	Gdy
55	Exi	.....	6–150	NE	NE	B-Li	B-Li 51	U	4	Spic	Det	C	Shul 370	B	Clark 360	½	6.28	33.56	Gem	34x7*	34x7*	Whit	Gdy
56	POL	SHC	.....	LN	LN	Full	Full GU9	...	4	UP	Math	B	Shul 650 B	R	Walk 25 A	F	6.96	.....	Jac	38x7	42x9	Smi	Gdy
57	Wes	.....	6–20	Bos	Bos	Full	B-Li 30	U	3	Spic	Det	A	Shul 310	B	Col 52000	F	5.1	20.8	Lav	32x6	32x6	Whit	Fir
58	POL	611KPN	6–120	Bos	Bos	Full	Full SU2	U	3	Bld	Shel	A	Shul 250	B	Clark B	½	5.5	22	Lav	34x5*	36x6*	Sch	Fir
59	POL	611 KPN	6–120	Bos	Bos	Full	Full SU 2	U	3	Bld	Shel	A	Shul 250	B	Clark B	½	5.5	22.	Lav	34x5*	36x6*	Sch	Fir
60	POL	611 KPN	6–120	Bos	Bos	Full	Full LTU-5	U	3	Bld	Shel	A	Shul 350	I	Clark ID	D	7.6	30.4	Lav	35x5	38x7	Sch	Fir
61	.....	.....	12	LN	LN	Own	Own	U	4	.....	.....	A	Own	B	Own	¾	6.83	28.2	Own	36x6	36x6†	Bud	Fir

ABBREVIATIONS

(Own—On. or Own; Optional —Op. or Opt.)

LOCATION OF GEARSET:
A—Amidships
13 J—Unit with jackshaft
R—Rear
U—Unit with engine

UNIVERSAL:
Acm—Acme
Arv—Arvac
Bld—Blood-Brothers
Det—Detroit
Hart—Hartford
KB—Kinsler-Bennett
MM—Mechanics
M-E—Merchant & Evans
14 Nor—Norwalk
Pet—Cleveland Universal
Pick—Pick
Sned—Snead
Spic—Spicer
Ster—Sterling
Ther—Thermoid
UM—Universal Machine
UP—Universal Products
Var—Varied

SPRINGS:
Am—Am. Auto Parts
Arm—Armstrong
Bea—Beans
15 Cham—Champion
Del—Delany
Det—Detroit
GC—Garden City
Har—Harvey
IC—Iron City
Kal—Kalamazoo
Lah—Laher
Lig—Liggett
Mar—Maremont
Math—Mather
Mer—Merrill
Nat—National
Pen—Penn
Per—Perfection
Phil—Phila. Springs
P.S.—Point Spring Co.
Row—Rowland
Shel—Sheldon
SP—Spring Perch
Stan—Stan-Par
SS—Standard Steel
Ster—Sterling
Tut—Tuthill
US—United States
Vul—Jenkins Vulcan

BRAKE (LOCATION):
A—Rear Wheels entirely
16 B—Drive Shaft and Rear Wheels
C—Front and Rear Wheel

FRONT AXLE:
Col—Columbia
Cont—Continental
17 Dod—Dodge
Fli—Flint
Sals—Salisbury
Sav—Savage
Shel—Sheldon
Shul—Shuler
Stan—Stan-Par
Tim—Timken
Torb—Torbensen
Vul—Vulcan

FINAL DRIVE:
B—Bevel Gear
C—Chain
I—Internal Gear
18 P—Spur
R—Double Reduction
S—Spiral Bevel
W—Worm

REAR AXLE (MAKE):
At—Atlas
Col—Columbia
Clark
Dun—Dunkirk
Eat—Eaton
Fli—Flint
Huck—Huck
IrM—Iron Mt.
19 LM—L M Axle
Russ—Russel
Sals—Salisbury
Shel—Sheldon
Stn—Standard Parts
Thom—Thomson
Tim—Timken
Torb—Torbensen
Vul—Vulcan
Walk—Walker
Wis—Wisconsin

REAR AXLE (TYPE):
F—Floating
D—Dead
20 ½—Semi-Floating
¾—¾-Floating

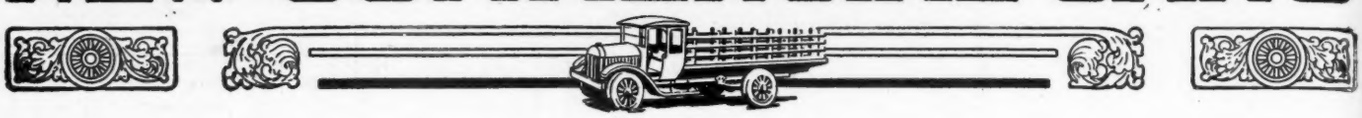
STEERING GEAR:
CAS—C. A. S. Products Co
Dit—Ditwiler
Dod—Dodge
Gem—Gemmer
Hin—Keystone Hindley
21 Jac—Jacox
Lav—Lavine
M-P—Muncie Products
Ros—Ross
Sag—Saginaw Products Co.
Woh—Wohlrab

WHEELS:
Arc—Archibald
AuW—Auto Wheel
Bim—Bimel
Bud—Budd
Cla—Clark
22 C&M—Crane & McMahon
Day—Dayton
Det—Detroit
Dis—Disteel
E&O—Eberly & Orls
Hay—Hayes
Hoo—Hoopes Brothers
Imp—Imperial
Ind—Indestructible
Jon—Jones
Kel—Kelsey
MM — Michigan Malleable Iron Co.
Mot—Motor Wheel
Mun—Muncie Wheel
Mut—Mutual
Nor—Northern
Pru—Prudden
Roy—Royer
Sch—Schwartz
Smi—Smith
Sta—Stanwell
StM—St. Mary
Stn—Standard
Wal—Walker
Way—Wayne
Whit—Whitcomb
W-L—Waterhouse & Lester

RIM EQUIPMENT:
StM—St. Mary
Stn—Standard
Wal—Walker
Way—Wayne
W-L—Waterhouse & Lester
23 Bak—Baker
Cle—Cleveland
Det—Detroit
Fir—Firestone
Gdy—Goodyear
Hay—Hayes
Jac—Jackson
Jax—Jaxon
Kel—Kelsey
Mil—Miller

In This Table Are Invited to Send in Their Specifications

NEW COMMERCIAL CARS



Federal Announces Two New Bus Models

ILLUSTRATED herewith are two of the latest types of Federal buses. One is designed to carry 25 to 29 passengers and the other will accomodate 18 passengers. The Federal Motor Truck Co., Detroit, Mich., in designing these new buses has endeavored to offer to the railway and bus companies of the country, equipment designed to exactly fit their requirements.

The 25-passenger bus model has a six-cylinder, 3¾ x 5-in., detachable head power plant developing about 43½ hp. when running 1200 r. p. m. or 70 hp. at 2300 r. p. m. Force feed lubrication is employed.

This particular model has a wheelbase of 190-in., which gives it a chassis weight of 5450 lb. The frame is of pressed steel and low in construction.

Electric equipment includes a special bus type Remy starter and generator and a large 185 ampere hour battery. Due to the large size of this generator it was decided to mount it on a power take-off opening on the transmission. Added accessibility is afforded by this arrangement.

The transmission, which provides four speeds forward and one reverse, is of the selective, sliding, stub tooth, spur gear type. It is mounted amidships with three point support on the frame cross members. Low speed reduction is 6 to 1. This ratio has been decided upon since it permits the use of a smaller reduction in the rear axle with a consequent increase in road speed.

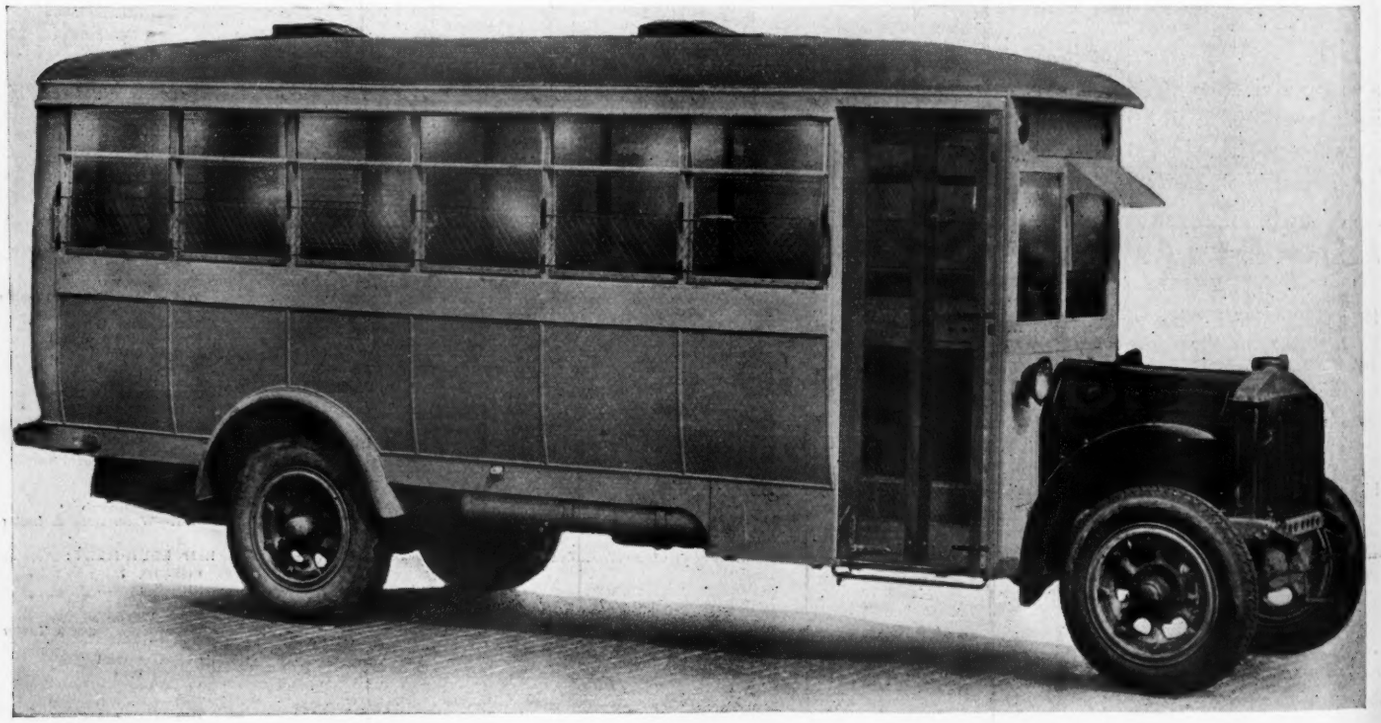
A generous cooling system is provided by fan and water. Water is circulated by centrifugal pump through a Spyrex detachable core type radiator.

Pneumatic tires and steel wheels can be furnished as shown in the illustration although the chassis illustrated is equipped with 36 x 6 dual rear tires, mounted on Budd disk wheels. The new 20-in. base pneumatic tires can also be furnished on Smith six-spoke wheels.

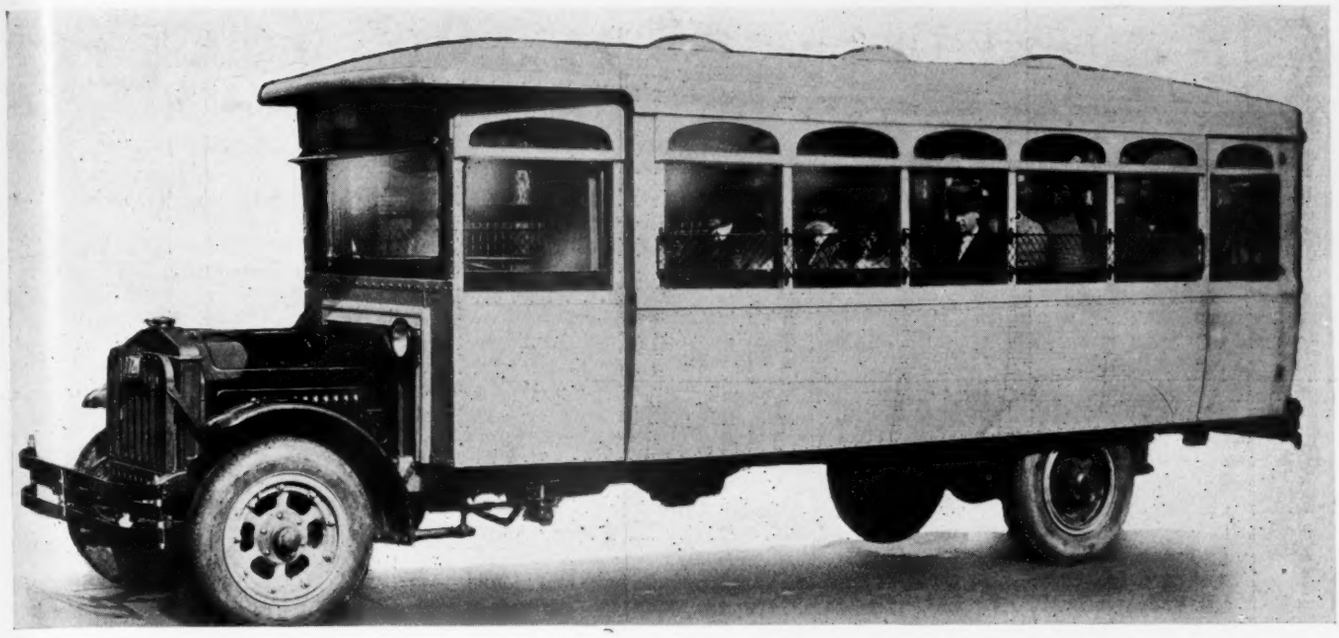
A ⅛-in. flat steel dash, a steel toe board and slatted wood floor are included as standard equipment.

The 18-passenger Federal bus is a sturdy chassis of attractive appearance and graceful lines. The wheelbase of this job is 168 in. Chassis weight is 4200 lb. The engine is a Continental 6M special bus type. It is a 6-cylinder, 3⅜ x 4½ins., vertical, L-head, mono-bloc type. This engine provides 34 hp. at 1200 r. p. m. and 55 hp. at 2300 r. p. m. Ignition is provided by an Eisemann GN-8 high tension magneto, with manually control spark. Gasoline is fed from a large capacity, steel, oval section tank through a Warner vacuum fuel system to a 1¼-in. Zenith carburetor. The cooling system includes a Long, tubular, detachable core radiator with press steel tanks and side members. Cooling is further aided by an 18-in. oak stand.

From the engine the power is transmitted through a Borg & Beck dry-plate, clutch to a selective, sliding, stub-tooth, spur-gear type transmission mounted amidships on the frame cross members. It provides 4 speeds forward and one reverse. From this point the power is transmitted through a two piece tubular propellor shaft equipped with two Snead and two Peters universal joints to a Timken Detroit, worm type rear axle.



New 18-Passenger Federal Bus Recently Brought Out by the Federal Motor Truck Company



In Offering This Job the Federal Company Endeavored to Offer to the Public, Equipment Designed to Fulfill Its Every Want

Maximum riding comfort is provided by 20-in., pneumatic tires, especially constructed vanadium steel springs, and by soft upholstery.

Briefly, the long pressed steel frame, Timken axles, steel wheels, large generator and heavy duty battery are a few of the outstanding points of construction.

All seats of this body face forward. Two passenger seats are provided on the left, single seats on the right and a full width seat extends across the rear. The emergency exit door is provided on the left just forward to the rear seat. The body itself weighs approximately 1800 lb. Aluminum fittings and scientiffic bracing of side pillars at top and bottom are responsible for this reduction in weight.

Gray Announces Light Truck

THE Gray Motor Corp., Detroit, Mich., recently added a commercial vehicle to its line of passenger cars.

Aside from its heavier construction for truck duty, the general specifications of the new Gray truck are similar to those of the Gray passenger car for which is claimed the economy record of 33.8 miles to the gallon of gas on a coast to coast run.

The several features of the Gray truck are pronounced points in light truck construction. The extra length and rigidity of the frame with its two tubular cross members, for example, the large brake drums, heavy construction of the rear axle and differential housing, the low speed and the low compression motor.

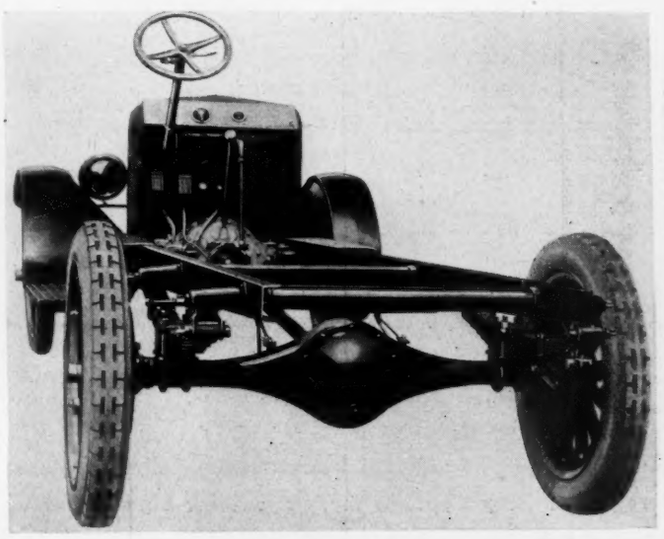
In a recent test run upon which a total of 10,152 miles was covered with a 50 per cent overload, 5700 miles were made without stopping the engine, three shifts of drivers were used, eight hours to a shift, and a continuous speed of 24 m. p. h. was maintained for practically the entire 10,000 miles. The purpose of the trip was to establish a new record for economy and reliability.

Power is supplied by 3⅝ x 4-in. four cylinder, L-head type engine with an S. A. E. horse power rating of 21. The cylinders are cast in block and the head is detachable. Thermo-siphon system of cooling with large water head is employed. The radiator is of the fin type. Equal distribution of oil is supplied to all cylinders by an improved centrifugal splash system of lubrication. Easy starting is assured by a Scoe carburetor equipped with a hot-spot manifold. Fuel is fed by gravity.

Control is provided through a single disk clutch and a selective sliding gear transmission providing three speeds forward and one reverse. Starting, lighting, and ignition is furnished by a Westinghouse starter and generator—2 units, 6-volt—and a Westinghouse distributor.

The front axle is a conventional I-beam Timken and the rear is semi-floating with adjustable Timken bearings. The service brake, external contracting, is mounted on the rear wheels and the emergency which is internal expanding is on the transmission.

The wheelbase is 120 in. The front springs, semi-cantilever, 22 x 2-in., the rear springs, semi-elliptic, 44 x 2½ in. and the tires, pneumatic, non-skid, front 30 x 3½-in. and the rear, 32 x 4½-in. cords. The price of the chassis is $575 f. o. b. Detroit.



Rear View of the New Gray Truck

Variety of Body Types Completes Spad Lineup

THE Overland Spad, lately introduced into the commercial car field by Willys Overland, Inc., Toledo, Ohio, has a complete line of sixteen models that will meet the demand of the butcher, grocer, confectioner, druggist, and a host of others engaged in trades that require rapid, light delivery vehicles. While there are four standard styles or body types known as combination number 10, 15, 20 and 25 there are twelve other possible variations derived by altering the cab and seating arrangement of these combinations mentioned.

Combination number 10 of this group has an open or canopy top, express body, flare boards, tail gate, full curtains, at the sides of the cab, body sides and back; full seat extending across cab with divided seat cushions and single lazy back for driver.

Combination number 15 has a vestibuled cab and express body, with canopy top, flare boards, tail gate, full curtains at body sides and back; full seat extending across the cab, divided seat cushions closed division back of driver's seat and three lookout windows just above the seat. The division back of the driver's seat is in two sections, either one of which or both is removable by taking out the four screws.

Combination number 20 has a closed panel body, with an open cab, full curtains at the sides of the cab, full length rear doors, full seat extending across the cab, divided seat cushions with single lazy back for driver.

Combination number 25 has a closed panel body with vestibuled cab, full length doors in the cab with drop windows, full length doors in the rear with window in each, full seat extending across cab, divided seat cushions and closed division back of the driver's seat. This is divided into two sections, with either one or both removable.

All body sills, subsills, top rails, body posts, rafters, and horn bars are of the best quality hardwood. Every joint is closely fitted, screwed tight or bolted and glued. The top and body are securely braced with wrought iron braces. A solid substantial spring lock fastens each vestibule door, the rear doors of the panel combination being equipped with both inside and outside locks. Three hinges instead of the customary two, hold the doors in place. Seat cushions are of the divided type which allows one side to be taken out or raised up, giving easy access to the battery or tool box below.

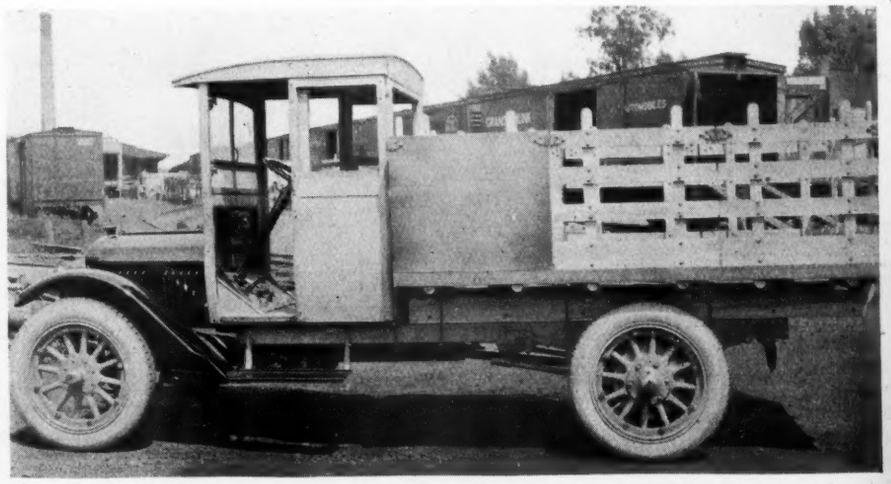
The curtains are made of Tower Brand oil duck, and this same waterproof, weatherized material covers a solid top to prevent leakage. The body finish is brushed lead and oil, eight coats of paint, striped and finished with the highest grade of finishing varnish, while long leaf yellow pine is used in the flooring. By special construction of the seats and panels the driver is enabled to either get in or out of either side with wonderful ease there being absolutely no obstructions to bar the way.

The chassis is distinctly commercial having been designed for commercial purposes only together with specially built light delivery bodies.

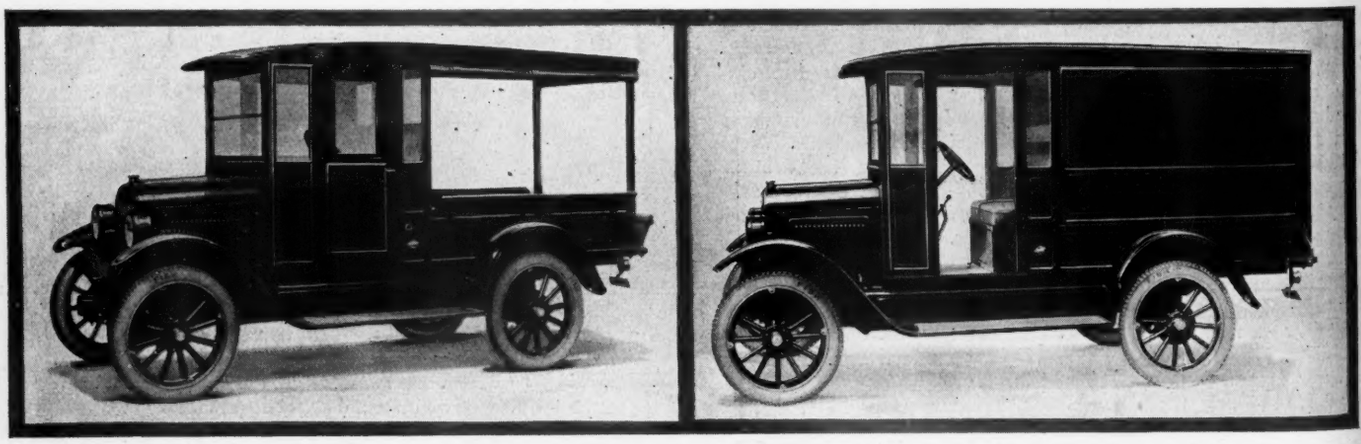
There is 68-in. loading space back of the driver's seat in the Overland Spad, and 44 in. width, while the express or panel bodies measure 51 in. high at the sides and 51¾ in. high in the center. A double ventilating windshield, lights, horn, starter and speedometer are standard equipment.

N. A. D. A. to Hold District Meeting in St. Louis

Plans are progressing rapidly for a district convention of the National Automobile Dealers Association at St. Louis on December 10. An attendance of over 2000 dealers from the St. Louis zone is expected. The program will include a luncheon with speeches on automotive merchandising subjects by a number of well known automotive men, and an evening session which may include entertainment.



New Platform Stake Body Recently Announced by GMC for Its One-Ton Model
This body built to meet the demand of farmers and business men, has been added to the regular line of covered and open express bodies now furnished by the company with one-ton models



Four Body Types With Twelve Other Possible Variations Adapts the New England Spad to Practically Any Business Requirement

Van Dorn Hoists

TWO popular types of mechanical hoists are being built by the Van Dorn Iron Works Company, Cleveland, Ohio, a vertical model which is installed between the driver's seat and the truck body, and a horizontal hoist for installation underneath the truck body. These hoists are described as being fast in operation and capable of dumping easily a six-ton load at moderate speed of motor.

The Van Dorn vertical hoist is operated by the screw jack principle. When a convenient control lever, reached from the drivers' seat, is pushed to the rear, the hoist clutch engages the power take-off of the truck engine rotating a heavy jack screw which in turn raises a large bronze nut which is threaded to the jack screw and fitted to the lower part of the hoist plunger.

The hoist is entirely automatic in action, stopping automatically when the body is elevated to a 45 degree dumping angle. The body can be stopped and held at, or lowered from any angle up to this point. The truck can be driving away while the body is lowering, as the hoist disengages and stops automatically as the body settles to its bed.

Gravity plays no part in lowering the body. The jack screw must be revolved in a reverse direction so that the body is pulled down by the same power which raised it. This is an important feature as repairs can be made on the truck chassis under the elevated body in safety as there is no danger of the hoist falling or setting gradually.

The hoist is self-lubricating. In the bottom of a 1-qt. reservoir located at the top of the hoist is a tiny measuring device which holds 1/200 qt. When the body is resting on the chassis, the upper valve of this cup stands open. When the plunger of the hoist starts on its upward travel, this valve closes and the valve in the bottom opens to let the measured quantity of oil flow over all working parts. But little attention is needed, one filling of the 1-qt. reservoir will serve 200 operations.

The Van Dorn horizontal model is popular when a very low body is not essential because of the compact, space saving location beneath the truck body. Power is transmitted to the hoist by a series of spur and worm gears to a 1 to 350 ratio. This hoist is also automatic in action, and self-lubricating.

Connection between the hoist and the hoist body is made by a link and arm connection insuring control at all times. When the body is in a lowered position the link and arm are folded up in a compact, jackknife fashion. As the hoist is operated the arms swing upward and straighten out raising the body. The body can be stopped at and lowered from any angle.

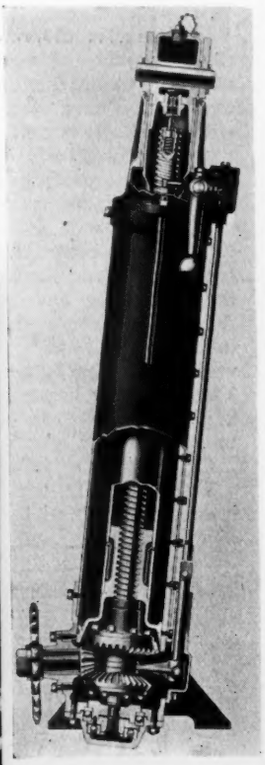
The hoists are entirely enclosed in oil-tight housings protecting them from moisture, from sand or grit from the load or road dust working into the mechanism.

All the drive parts that is necessary for installing the hoist on any truck are also manufactured. A special universal joint simple in construction and in number of parts contained in it is another development of this company. All parts are of standard automotive practice and design.

The Van Dorn Iron Works Company also builds a complete line of steel dump truck bodies to meet all dump truck requirements. The firm's hoists and body factory is one of the largest equipped in the country.

Right: Cutaway Showing Mechanism of the Van Dorn Vertical Hoist.

Below: Interior View of One of the Buildings of Van Dorn Iron Works.



Rates on Rubber Products to Pacific Coast Ports Revised

The Traffic Committee of the Rubber Association of America, Inc., has been in negotiation for some time with the eastern carriers seeking a revision of the rates on straight carloads of pneumatic tires and tubes and mixed carloads of pneumatic tires, tubes, solid tires and wheel rims and parts, including flaps and reliners to Pacific Coast ports, and intermountain territory, from the Middle Atlantic and New England states.

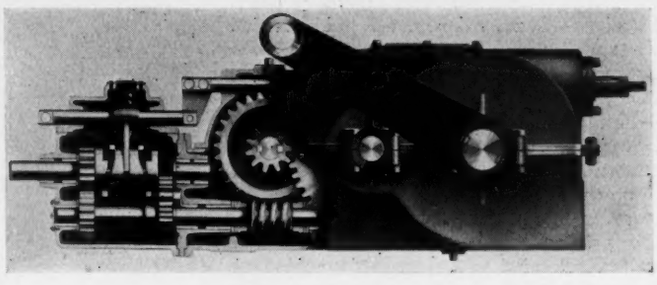
The rates applying on shipments via all-rail have been approximately $3,32 per one hundred pounds depending upon the point of origin.

As a result of these negotiations, the eastern lines have recently agreed to establish a carload rate on the articles mentioned, of $3 per one hundred pounds, being a rate reduction of approximately 9.6 per cent.

The new rates will not be made effective until the tariff organization of the carriers can place the new schedules in effect, which will probably be in about sixty days.

Reductions in the carload all-rail rates to the same destinations from Pittsburgh, Buffalo and points west thereof, had previously been accomplished.

The Universal Wheel Co., Ltd., Windsor Ont., Canada, manufacturer of a disk wheel for automobiles has leased the plant of the Universal Button Co., at Windsor and will start production in 60 days.



Cutaway of the Van Dorn Horizontal Hoist

TRUCK EQUIPMENT AND APPLIANCES

Curtis-Fordson Air Compressor Unit

THE Curtis-Fordson Air-Compressor Unit, offered by the Curtis Pneumatic Mchy. Co., St. Louis, fulfills the requirements of the road contractor, structural steel field jobs, oil field work, telephone and telegraph construction work, well drilling jobs and everywhere where a supply of compressed air is wanted but where the installation cannot be made permanent and the plant must be capable of moving from job to job quickly.

The Curtis-Fordson Tractor Outfit performs this service and at the same time has the advantage of the fact that the tractor can be detached and used for any and all tractor purposes when the outfit is not being used as a compressed air outfit.

The compressor is large enough to take care of the average intermittent use of two special contractor's type (6 ft. hole) jack hammer drills or any number of drills or other types of tools up to a total air consumption of 70 cu. ft. per minute. This compressor can be used to supply air for jack hammer drills, paving breakers, riveting hammers, drills for structural steel work, rammers and tampers, compressed air hoists, sand blasts, stone cutting tools, quarry tools, rivet forges, clay and coal mining diggers, for pumping water, etc.

To detach the tractor, it is only necessary to uncouple two trailer hook brackets which clamp over the rear axle of the tractor, take off the belt and disconnect a quick detachable attachment to the steering mechanism. The tractor is then ready for ordinary usage. For city work, this outfit can be furnished with rubber wheels all around. The following is a brief review of the compressor specifications:

Specifications

Compressor—6 in. x 6 in. Curtis Model "A". Style—Single acting, double cylinder pulley, high and low level oil filling gage. Receiver—24 in. x 36 in. (47 gal.) riveted air tank, suitable for 150 lb. pressure, with air gage, pop safety valve and drain cock, also ¾ in. outlet cock and nipple. Piping—Piping between compressor and tank. Governor—Air pressure unloader or governor for compressor piped to tank. Cooling System—Water pump and radiator for compressor. Mounting—All the above mounted on all steel two-wheeled trailer, provided with steering mechanism and connections so that the trailer wheels will steer with the tractor. Trailer provided with adjustable steady-stays, also legs to support trailer when detached. Fittings—Adjustable combined spring idler and belt tightener, equipped with flexible roller bearings—necessary endless drive belt and belt guards. Weight—Complete outfit, 4700 lb. Dimensions—Height over all, approximately 6 in.; Length over all, 12 ft. 6 in. Price—Complete outfit, net f. o. b. St. Louis, $1500.

K. P. Governor for Buses

The K. P. Governor, put out by the K. P. Products Co., Inc., 50 Pine St., New York City, is described as being something new in the governor field. By its use the speed of bus operation can be controlled. Overspeeding can be entirely eliminated. It is accomplished by setting the governor to any desired speed, which will prevent driving beyond that speed and without the loss of power.

This governor is of simple construction, small, compact, tamper-proof and easily installed. It is mounted between the carburetor and the intake manifold. All of the carbureted gases pass through it. It is the impact of this gas plus the vacuum in the intake that operates it. This governor has only one moving part, a plunger which is connected by a pin to a balanced sleeve valve.

Operation is as follows:

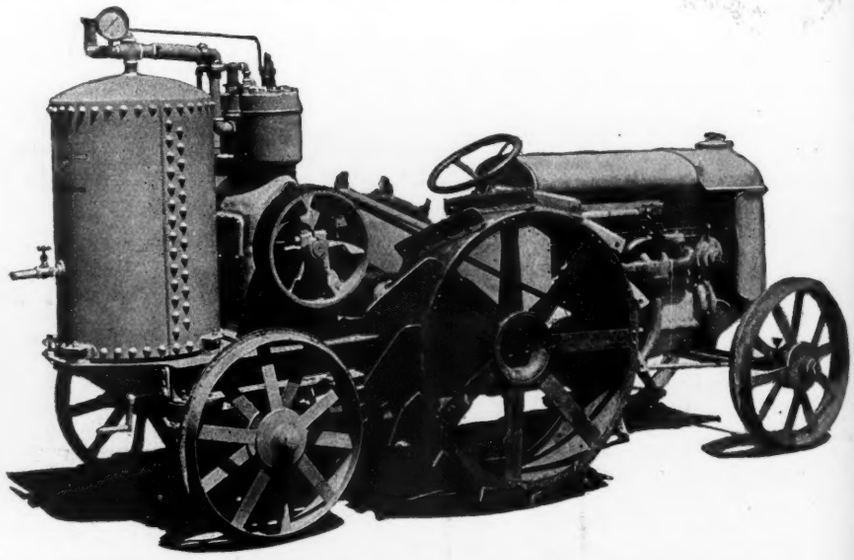
The gas from the carburetor rushing into the governor forces up a plunger. This moves a sleeve valve which starts to close the slot. Because the impact of the gas diminishes as the valve opening becomes smaller, the gas impact, by itself, is not sufficient to complete the closing of the valve to the desired aperture. At this point the vacuum, which becomes greater as the valve closes, starts to operate. This is the purpose of the port-hole and the recess on the plunger.

The vacuum operating through the port-hole and through the recess takes up the job, where the gas impact leaves off, and completes the movement. The amount of impact necessary to perform this is regulated by the spring at the top which in turn is adjusted by a set screw. Thus the impact of the gas plus the vacuum pressure, working in harmony, automatically operates the governor throttle and the engine speed is controlled at any point.

Vacuum pressure is controlled by the tapered screw which regulates the size of the port-hole opening. It is further explained that it is through this controlled vacuum pressure that smooth action of the governor is made possible and surging prevented.

Correction

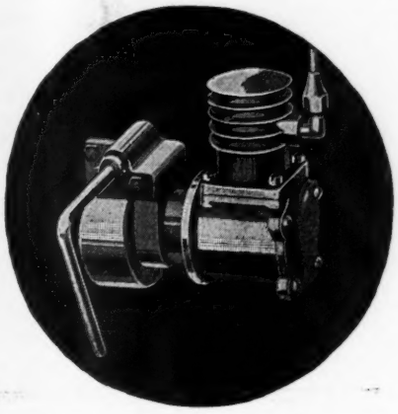
In the October issue of the COMMERCIAL CAR JOURNAL, page 57, the caption illustrating the Ditwiler mechanical hoist and dump body caused confusion as to the identity of the manufacturer. This product is manufactured exclusively by the Ditwiler Mfg. Co., Galion, Ohio. The caption should have read, "The Ditwiler Mechanical Hoist and Dump Body Unit."



Making Compressed Air Conveniently Available for Road Work

Wizard Power-Driven Pump

The Continental Pneumatic Equipment Co., 8030 S. Chicago Ave., Chicago, Ill., is offering a power-driven tire pump, known as the Wizard that will fit all standard transmissions. Designed especially for use in connection with commercial vehicles it is particularly adaptable to motor bus service where it will



This Pump Will Fit Any Standard Gear-Set

accommodate any size of tire up to 40 x 8 ft.

It is simple and durable in construction and differs in mechanical principles from the conventional. Three parts compose its moving mechanism, the piston, connecting rod pin and crankshaft. The valveless construction is claimed not only to do away with many small parts but back-pressure as well. Another feature is that it is stated to operate efficiently even at high speeds. Recommended speed is 600 r. p. m.

Holley Carburetor

The low volatility of gasoline today is responsible for the latest development of the Holley Carburetor Company, Detroit, Mich., manufacturers of the standard carburetor on Ford cars.

This new outfit known as the Holley Hot Shot for Fords and consisting of an exhaust and intake manifold, a hot air stove and choke control, together with a specially tested carburetor will retail at $14.75 anywhere east of Denver.

Gasoline economy and increased motor power especially when warming up in cold weather are claimed to be affected by this outfit.

Changed gasoline standards made necessary a change in carburetor design. But this alone was not sufficient. Only through the utilization of heat to complete vaporization was it possible to perfect a carbureting device to cope with the gasoline situation. The problem was really that of finding a way to properly apply the heat.

Experimentation proved that by running a tube from the exhaust manifold through the intake manifold, most satisfactory results were obtained. By so doing it was found not necessary to heat up the intake manifold before reaching the gas, and as it is inside the manifold, it is not effected by the cold air blown back by the fan. Quick heating is claimed to result from this construction. Loss of power through over-heating is also prevented.

To further prevent any loss of power there is provided a stove with a damper. In summer the damper is used to shut out the heat from the stove and allow the cool air to flow into the carburetor. In the winter time the damper is closed so that the hot air is drawn into the carburetor. By this means the temperature within the manifold may be changed 50 degrees.

To install the new outfit requires no drilling of holes, and can be done by any one in 30 minutes. It is simple in design and calls for no care except the opening and closing of the damper in summer or winter.

A clear conception as to operation may be had by referring to the accompanying cut-away illustration in reading the following description:

(1) This iron pipe carries some of the heat from the inside of the exhaust pipe. (2) At the first explosion the red hot gas passes along the ordinary exhaust manifold, but a certain amount of it is diverted into the iron tube. (3) Note how the mixture from the carburetor surrounds the small pipe. The heat from this pipe causes the mixture to become highly volatile. (4) The Muffler. After some of the exhaust gas passes through the small iron pipe (1) and increases the volatility of the mixture (3) it discharges into the muffler. (5) This exhaust pipe is the outlet for the hot gas that passes through the small iron pipe. (6) This adjustable damper enables the driver to control the air intake into the carburetor. (7) The Carburetor. (8) Cap of muffler which can be unscrewed to remove any foreign matter.

Detroit Motor Bus Rolls Up Large Mileage

The Detroit Motor Bus Co., made an aggregate mileage of 432,000 miles for the month of September as compared with 295,664 miles in 1922. The company now operates 125 buses; in 1920 only 22 buses were in operation.

Resilient Rubber Finger Grips

F. D. Farr Co., Perry, N. Y. is offering a simple rubber device, simplifying throttle lever movement. It is know as the Resilient Rubber Finger Grip and is constructed from high-grade rubber, black in color to match the standard Ford wheel and fittings.

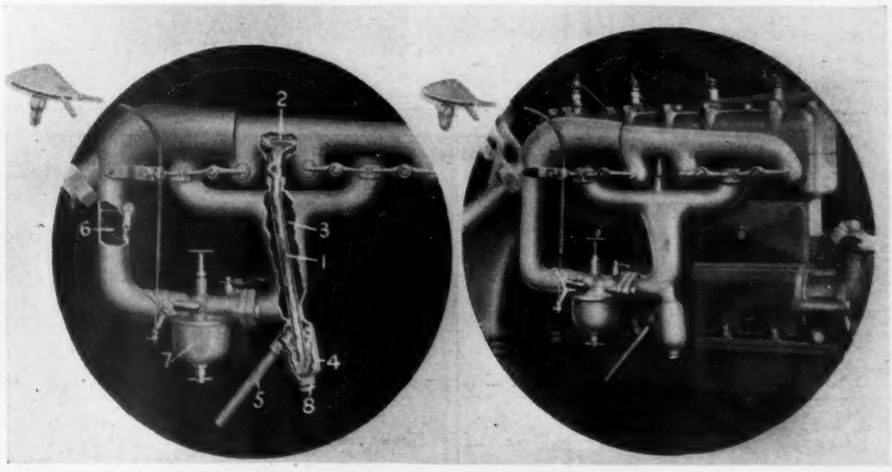
In the outer ends of the Grips two

Close-up and Mounted Views of the Farr Rubber Finger Grip

Finger tips rest naturally in the two cavities of the device.

cavities, diagonally placed slightly below center naturally receive the controlling finger tips of the hand resting in the driving position upon the wheel. With the aid of these cavities, it is possible to move the throttle lever several notches either way, merely by bending the fingers and without sliding the hand along the wheel rim.

The rubber also serves to insulate the fingers from the cold levers during the winter months. Retail price, 25 cents per pair. Mounted 12 pairs to the display card.

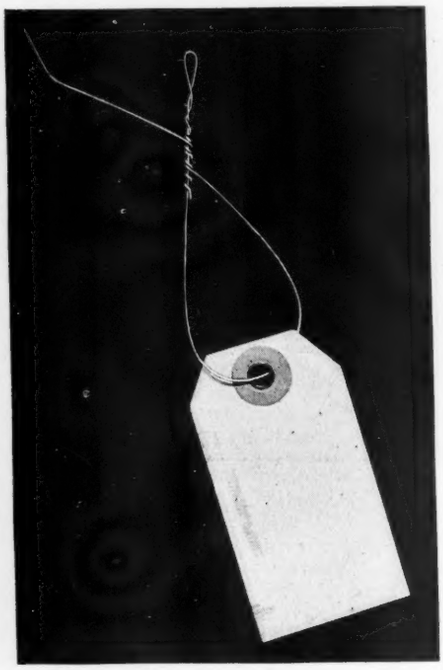


Cutaway and Mounted Views of the New Holley Hot Shots for Fords

Left: Showing steel tube running from exhaust pipe through intake manifold to heat the incoming gas; also new damper arrangement on carburetor intake ready for seasonal adjustment.
Right: In position on a Ford engine; fastened by a few bolts

Speed Tag Fasteners

A line of tag fasteners that will accommodate the needs of any business or industry in which tags are employed for identification purposes is being offered by the Speed Tag Fastener Co., Inc., Buffalo, N. Y. These fasteners enable the ready and permanent attachment of tags.



These Fasteners Enable Ready and Permanent Attachment of Tags

They are offered in ten lengths ranging from 6 to 24 in. This range will cover practically any requirement.

The fastener consists simply of a wire of very pliable material looped and coiled at one end. A supply on hand in the service or shipping departments facilitates the work of labeling since any size is available and requires but a fraction of a moment to attach. Different grades and gage of wire are offered. The fasteners are packed in bundles of 500 and are shipped in quantities of 5000 and upwards.

To attach wire thrust coiled end through the tag, pass around article, cross the wire over at the base of the coil, and give three turns only around the coil while holding tightly at the point of crossing with the thumb and fore finger of the other hand. To remove, the directions are reversed.

Samples of the Speed Fastener are put up in folder form which may be obtained from the manufacturer. This folder with its sample fasteners will show very clearly the utility and time saving feature of this device.

Right: New Erie Motor Truck Winch

The New Erie Winch designed for pole work and manufactured by the Erie Hoist Co., Erie, Pa., is known as the Model 228-A-40. It is for pole setting and removal. This machine is installed on a truck immediately behind the cab. One drum operates the boom, which is mounted on the rear of the truck. It can be locked in any position by a ratchet pawl. The other drum raises and lowers the pole. The transmission furnished with this winch is of the selective type having three speeds forward and one reverse. In design this transmission is similar to those employed in trucks and passenger cars.

New Perfex Radiator for Fords

One of the newest developments of interest to automotive folk is the new Perfex brass tank replacement radiator for Ford cars. It is a development of the original Perfex bronze core radiator which was one of the first replacement radiators on the market.

Some of the outstanding features: Heavy gage brass tanks both top and bottom. The bottom tank is reinforced with 20-gage brass, riveted and soldered.

The core is all-bronzed and is made up of one piece. The only joint, which is on the motor side, is double-lock seamed and carefully soldered inside and out. Bronze aerating wings carefully soldered between water channels are stated to provide extra radiating surface without affording a place for dust and mud to collect.

This radiator is completely interchangeable with the regular Ford radiator and can be used with the standard Ford shell.

A patented spring bracket suspension holds the radiator in place at the same time relieving it from all strain.

Its makers, the Racine Radiator Co. of Racine, Wis., claim that the same processes, workmanship and materials are used in this new radiator as go into this company's truck, tractor and industrial radiators.

Wichita Visible Gasoline Pump

The Wichita Gasoline Pump is made for operation by hand or air, or a combination of both, and with five, ten or fifteen gallon measuring cylinders. It is manufactured by the Hayes Equipment Co., Wichita, Kan. A convenience when filling is the shut-off at the nozzle, which is regulated by a lever gate valve. The frame is exceptionally strong and rigid.

Kimball No. 5 for Buses

The F. W. Mann Co., Milford, Mass., manufacturers of Kimball jacks to meet any automotive requirement, offers its Kimball Jack No. 5 as specially suitable for bus service.

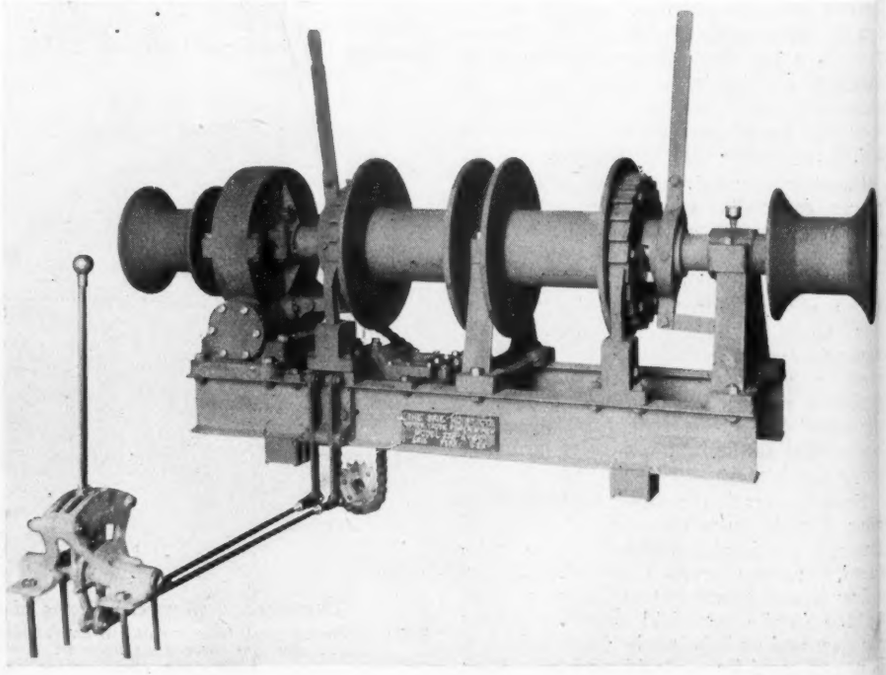
This jack, which is also known an the Kimball "Brute," made of malleable iron,

Designed Especially for Bus Service

is described as being sturdy and reliable. An exclusive feature of all Kimball jacks is the taking of the full load on ball bearings. The action of these bearings not only reduce frictions but also has a material effect in the final amount of energy required to operate the jack.

Another feature which makes the lifting of a heavy bus easier is the provision of a bronze nut in the main gear which runs against steel. This arrangement prevents sticking or "freezing."

Overall height is 12⅜ in., rise 6⅛ in. and price $13. Length of handle, 47 in. An extra 18 in. section for additional length to the handle can be obtained if desired at an extra cost of $1.



N-L Bus Ventilators

The Nicholas-Lintern Co., Cleveland, Ohio, manufacturers of roof exhaust ventilators for all types of vehicles for years, recently designed and are now manufacturing a new type of ventilator for buses and closed cars.

It is made of galvanized sheet steel and aluminum, and is stated to fully meet the maximum requirements of air changes as demanded by health authorities and at the same time give protection from the weather.

New Type of Nicholas-Lintern Ventilators Ideal for Buses

On the inside of the vehicle a polished aluminum grill placed over the ventilator opening presents a very neat appearance. A regulative or non-regulative grill is furnished with the ventilators as specified. The N-L Bus Ventilator can be adapted to all types of buses. Installation is very simple, and meets with the entire satisfaction of both body builders and owners.

Bunting Bushings in Cartons

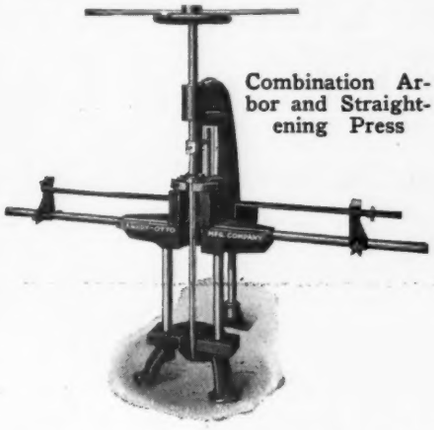
Bunting Piston Pin and Spring Bolt Bushings for replacement in all automotive vehicles are now packaged in strong cartons of corrugated fibre board by the Bunting Brass and Foundry Co., 706 Spencer St., Toledo, Ohio. The cartons contain 24 bushings in most instances. Some of the larger bushings are packed 8 and 12 to the carton. An attractive label in colors compels attention.

The carton also simplifies shipping as its strength far exceeds transportation requirements. Heretofore jobbers and dealers handling the Bunting line were obliged to store the bushings in bins. The new carton has met their need for a more convenient package. Although there are hundreds of different sizes for the various makes and models of cars, there are only six different sizes of cartons.

Bunting Bushings Now Packed in Cartons

Canedy-Otto Arbor Press

The accompanying illustration is that of the 3½ combination arbor and straightening press, put out by the Canedy-Otto Mfg. Co., Chicago Heights, Ill. It lists at $152.50.



Combination Arbor and Straightening Press

This outfit takes up the space of but one device, but has the advantages of the straightening and arbor presses of the heavy-duty type.

The bed construction permits easy adjustment of the blocks and the pressure screw is high carbon steel, 30-ton capacity.

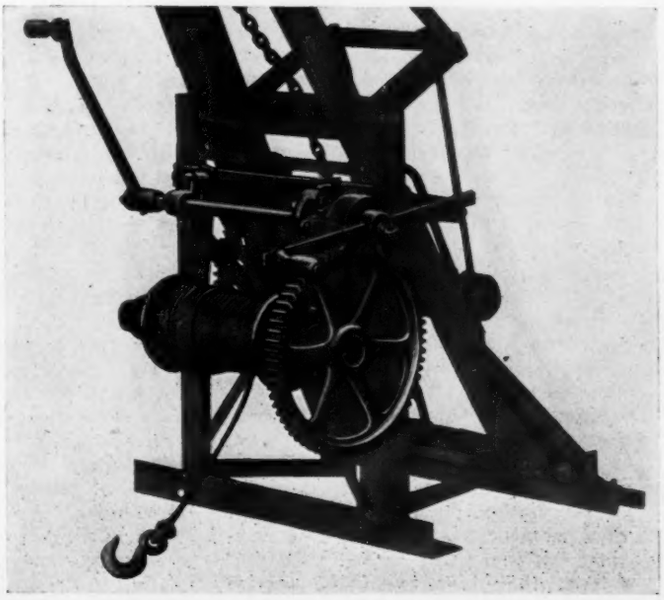
The Manley Auxiliary Winch

Recognizing the necessity of wrecking equipment that is fully capable of coping with even the most problematic wrecking job, the Manley Manufacturing Co., York, Pa., has supplemented its crane with a winch to be attached to the front saddle member of it.

This winch consists of a frame, to which is bolted the bearings for the drum, gearing, etc. It will be noted from the accompanying illustration that the gear on the drum is very large and the pinion small, which provides a powerful leverage. The drum holding the cable is provided with deep flanges and is capable of receiving 200 ft. of cable although 100 ft. is only necessary. The Manley crane is ideally designed for this winch. The winch can readily be attached in a solid and firm manner and with little labor.

Two handles are furnished with the crane. They are used in connection with the winch, changing from one to the other at will.

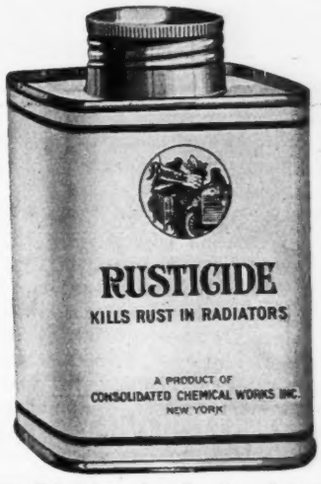
The addition of this winch to the Manley crane, provides means of handling wrecks which are a considerable distance from the road or down an embankment.



Manley Auxiliary Winch for Use in Conjunction With Manley Crane.

Rusticide

For the dissolving of rust and removing scale and slimy obstructions throughout the cooling system, the Consolidated Chemical Works, Inc., 253 Broadway, New York City, has brought out a compound of rust-destroying oils prepared to mix readily with water in radiators.



Rust Dissolver for Cooling Systems

This product, called Rusticide, is said to contain no acid, alkali, or other ingredients harmful to metal or rubber connections and can be used together with any anti-freezing preparations.

SERVICE AND REPAIR DEPARTMENTS

See Need for Better Service in Electric Equipment Field

Electric Associations Inaugurate Campaign to Promote Better Service Facilities and to Bring Adequate Service Into Smaller Towns. Car and Truck Manufacturers Endorse Movement

By C. P. SHATTUCK

THE Automotive Electric Service Association (the A. E. S. A.), the members of which operate the authorized service stations of the electric equipment manufacturers, is conducting a campaign to bring about more harmonious and efficient service relations between all concerned, namely, the car and truck manufacturer, equipment maker, the dealer and distributor. The object of the campaign is to clear away the misunderstandings relative to specialized electrical service on ignition apparatus, generators, motors, batteries, horns, etc., and to render to the final customer—the car and truck owner—service that satisfies.

The campaign began in July. Letters were sent to factory executives and service managers, also to similar officials of the equipment makers, with a summary of these to the members of the A. E. S. A. The letters teemed with interesting facts but lack of space prevents their reproduction here. A summary of the high spots follows:

Emphasis was placed on the need of developing high grade service in the small places.

Educating the dealer that the specialized electrical service station is not a competitor but an asset to the dealer in service and sales.

That the rendering of efficient service requires trained electrical men and a large investment in service station equipment.

That the policy of some car manufacturers in listing and selling electrical repair parts not only makes it difficult for the dealer to avail himself of the service station, but interferes with the establishment of close business relations between them.

That the objective of the service station, i. e., better service and lower cost to the owner, cannot be achieved on labor alone.

That better and cheaper service will be obtained by the co-operation of all concerned, which includes the car and truck maker, their service heads, the equipment makers, the dealers and the authorized service stations.

At the time of this writing a sufficient number of replies were received from car and truck manufacturers to indicate that they were in favor of the campaign and endorsed the aims and objects of the A. E. S. A. A few made constructive criticisms and suggestions which will be acted upon by the association.

Co-operative Plan Under Way

Co-operation by the Automotive Electric Association (the A. E. A.), makers of ignition units, generators, motors, batteries and horns, already exists for at the summer meeting of this body service in its various ramifications was discussed with representatives of the A. E. S. A. and much progress has been made. These two organizations are working in joint conferences to bring about better service conditions and to solve the problems which are mutual.

The subjects taken up jointly include the education of all service stations on better cost accounting methods; flat or estimate prices; co-operating with the car and truck dealer, etc. One of the big tasks to be tackled is the development of service stations in the small places that will supply proportionately the same calibre of service as is rendered in the large cities. Another subject on which the A. E. S. A. and A. E. A. are to work is the development of a standard policy, relating to the qualifications of the service station. In other words, it is believed that a uniform policy by the equipment maker will do much towards placing the electrical service business on a stable basis.

That these associations are working closer than in the past was somewhat evidenced by the reception of the address of P. J. Durham, secretary of the A. E. S. A. at the recent meeting of the A. E. A. "Automotive Electrical Service Today," was the subject and its treatment was well received. Mr. Durham said in part:

"Motor car factories are kept in operation—not by a few large distributors, who have well equipped service stations, but by thousands of small dealers—the minority which cannot offer up-to-the-minute departmentized service because the number of cars they individually sell does not warrant it.

"The millions of cars create a lot of work—more work, if properly done, than there are men willing to do it. This large volume of work requires classifying and allotting to those who will train men and equip shops to specialize and handle—efficiently—certain classes of repairs. These are very essential to the industry. They are handling a vast amount of work, yet many of the larger car distributors and factory branches seem to regard these institutions of specialized service as outlaws or pirates, or at least as competitors.

"There is probably but one thought in the minds of these large distributors, and that is to give the best possible service on the particular car they sell. But instead of mobilizing all of their service agencies in the field to their aid and co-operating fully with authorized service stations of equipment manufacturers, there is a tendency among car dealers to undertake any class of work that appears at the moment

to be profitable. I say 'at the moment' because no thought is given by these dealers to the fact that they are probably retarding the national development of that particular class of service, thereby depriving many a small car dealer, selling the same make of car, of the service he needs.

Why a Separate Division

"There are some who refuse to recognize that this work is a separate division of automobile service, which is important only to show the necessity for improvement in this specialized line. The majority of those interested, whether car manufacturer, dealer or owner, concede without question the necessity for specialization on this work. They value its importance and recognize its indispensability.

"When the first authorized electrical service stations were established a few years ago, it is possible that thought was given by electrical manufacturers only to creating a means of popularizing their equipment with the car manufacturers and the public. They built better than they knew. They instituted a new, different and permanent division of automotive service. It is better organized and further developed today than any other division, although its youngest member. And if it is not perfect, it is only because of that youth.

"At first equipment makers doubted whether the reputation of their product would be safe in the hands of a so-called independent concern. Some of them considered that factory branches and road men on their pay rolls were the only safe procedure. Upon trial, however, it developed that their interests were safe if coupled with the interests of the representative. Service representatives do not mean the same thing to all manufacturers. Each has different problems and in all cases vastly different ideas. But there is one common phase that the entire automotive industry is interested in, the actual repair service, which requires skilled workmanship.

Endorse the Service Stations

"There is no longer any doubt that the electrical service station has been accepted by the automotive industry, nor is there any question that it is here to stay. It is generally conceded that independent concerns can service electric equipment efficiently and more economically than it can be done by the equipment manufacturers direct. Last year 2500 car dealers went on record that this assistance was necessary to them, and now we have indisputable evidence that car makers believe this service too good. In fact answers to a recent letter addressed to them by the A. E. S. A. indicate they endorse the specialized electrical service station, and consider it plays an important part in the servicing of their cars.

"There are faults of course, in this arrangement of specialized service, but all of these faults can be remedied by co-operative effort. First in importance is the fault of an insufficient number of stations, many important motoring centers being without electrical service facilities. Neither car nor equipment makers consider we have reached the saturation point—or the satisfaction point—in number of points of electrical service contact. Certainly the service facilities are inadequate when it is necessary for a car dealer to ship a generator 50 miles to a distant city, or when the owner must drive as many miles to reach an authorized service station. More representatives must be obtained to make this service nationally successful.

"Good electrical service representatives are hard to get, partly because the requirements of the equipment makers is so exacting but because the prospects for financial success in this business is not alluring. Many car dealers expect the service representative to handle the free service warranty repairs but when electrical parts are needed the service station cannot compete with the car factory. When confronted with the pirate parts menace, it seemed a happy solution—an important progression in service—for the car manufacturer to stock up his dealers with genuine parts at increased discounts for lot purchases. It is not the fault of the car dealer that electrical repair parts were not separated from the car parts at these attractive discounts. There was no one who made it plain to the car maker that the electrical repairs belonged to the electrical service division of the industry.

Confusion in Parts Catalogs

"It is time some one essayed to tell the car maker about these electrical parts and how they should be listed so as to give his dealers the best possible service for the authorized electrical service station. In the parts catalog of the car makers, the electrical parts are sandwiched in between other chassis parts, with no reference made to the trade name for identification of the equipment. They are listed under the car factory part numbers and names, and at prices much different from the equipment maker's list. Many car makers are on record that they do not wish to handle electrical parts, but in many cases parts are listed, down to commutators and pole pieces. And other parts are as absurdly listed; parts that even the big electrical service stations seldom have occasion to use.

"The average car dealer orders electrical parts exactly as he orders other car parts from his factory, and by giving the type and model of his car only. That is wrong. It implies delays which the accessibility of the nearby authorized service station makes needless and it gives the dealer the feeling that he is expected to perform all electrical service even at a loss. The sale of electrical repair parts is the sustaining factor of the electrical service business and the automotive industry cannot have the large number of good electrical service stations it wants—if the parts business is to go through other channels.

"The car manufacturer has insisted that ample electrical service facilities be available for his dealers if they should need them, but is it not clear to him that these stations must be sustained by the parts business. Many car dealers have told us that they thought the equipment manufacturer paid the expense of maintaining the service stations for handling warranty service. The car dealer must be enlightened on other scores as well as this.

Why Charges Vary

"Second in seriousness among the faults of this service is that it is not sufficiently progressive and practical. Not enough consideration has been given by some to its high cost and the inconvenience imposed on those who would use it. Some of the replies received from manufacturers indicate that the service is good in spots but not universally good, also that charges are sometimes high and delays frequent. These faults are known and taken very seriously by those who have development of this service at heart. It is kept constantly in mind that service rendered by these specialized service stations must at all times be less expensive than that available elsewhere.

"Prices in parts in many cases are too high and ofttimes labor charges are also high. Lack of standardization also has greatly hindered any attempts toward a unit or sub-assembly exchange. This unit exchange feature of electrical service will be given more energetic treatment than has been accorded it in the past. It is remembered that time is the all important factor in service work. The car owner must not be deprived of the use of his car, and every effort is being made by the better electrical service stations to keep cars out of the shop and on the road. Ways and means for the improvement of this service have been discussed seriously during the past three years at many joint meetings of equipment manufacturers and the service representatives through their respective associations. It is anticipated that marked strides will be made in the near future through co-operative effort and such development will benefit the entire automotive industry for the simple reason that the work is founded on a liberal and true interpretation of the word SERVICE."

Christmas Stockings for Accessory Dealers

This stocking, made of heavy cardboard and decorated in rich Christmas colors, can be used both as a container and as a display. It is being distributed to motor accessory dealers to help increase holiday sales of Schrader products by A. Schrader's Sons, Inc., Brooklyn, N. Y. Printed on the front of the stocking is a Christmas greeting card bearing at the top, the Automotive Equipment Association's slogan "Something for the Car for Christmas."

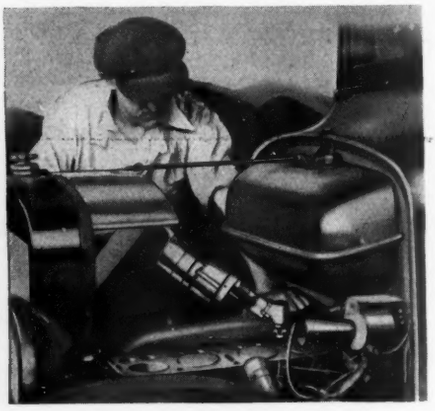
Service Station and Repair Shop Appliances

Petersen "Double-Action" Valve Grinder

A. H. Peterson Mfg. Co., Milwaukee, Wis., is now in quantity production on a new type of valve grinding machine, known as the Petersen "Double-Action" Valve Grinder.

This machine automatically combines a revolving and an oscillating motion in grinding the valve. It is equipped with an off-set attachment to permit easy access to valves located at points difficult of access. Every type of valve can be handled.

All necessary attachments are included in its equipment. Three removable



Points Difficult of Access Readily Reached by This Grinder

driver spindles, 3 in. and 12 in. long, which slip into the chuck of the machine are furnished. Each spindle will take any of the various driver blades, which are designed for proper contact with different types of valves.

The Petersen Valve Grinder comes fully equipped with all attachments, universal motor for A.C. or D.C. currents, 8 ft. of flexible rubber connecting cord, separable attachment plug complete, ready to use. Price, $45 for 110 volt current, and $48 for 220 or 32 volt.

New Turner Blow Torch

New features are embodied in the new torch of the Turner Brass Works, Sycamore, Ill. One of them is a safety feature. It is a safety valve incorporated at the end of the horizontal pump cylinder. One of its fittings is a diaphragm accurately proportioned to give away automatically at 40 lb. air pressure. A thumb nut on this valve permits the operator to release the air pressure after the work is completed, or to decrease pressure as desired during the operation of the torch.

Another feature is the one opening in the tank. This opening located at the top, above the fuel line, is sealed by a screw-thread filler-plug.

The pump is also equipped with a pump leather that spreads like a parachute on

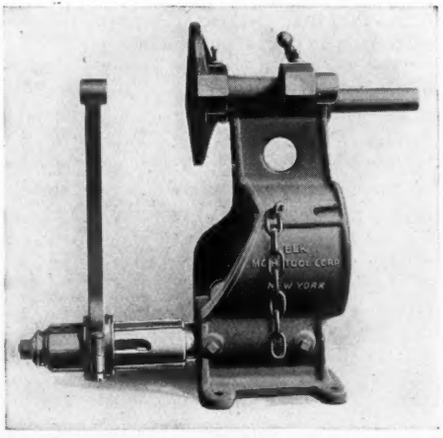
Any Degree of Air Pressure Easily Obtained

the work-stroke and, like a parachute, closes on the return stroke. This leather is automatically lubricated from a reservoir of vaseline in the brass washer at the end of the pump rod.

The Elk Machine Tool

The Elk Machine Tool put out by the Elk Machine Tool Corp., 243 West 17th St., New York City, for shaving and burnishing bearings to a perfect fit, as well as align-reaming wrist-pin bushings and pistons, greatly facilitates the fitting of connecting-rod bearings and wrist-pin bushings.

The Elk is a portable hand-operated tool performing six different operations



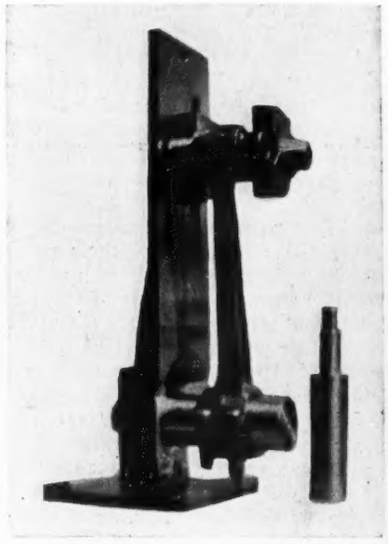
For Shaving or Burnishing Bearings to a Fit

completely, fitting and squaring bearings, wrist-pins and pistons. It is built rigid, to be bolted and operated on a workbench. Height, 22 in.; greatest length, set up, 15 in.; greatest width, 9 in.; weight, 55 lb.

Whitney Connecting Rod Aligner

The Whitney Connecting Rod Assembly Aligner manufactured by the R. S. Whitney Mfg. Co., Lewiston, Me., is designed and constructed to test the alignment of bearings, wrist pins, and bushings, detecting all twists or bends and showing accurately the extent of the defect.

This tool is provided with an arbor to which the crank pin end of the connecting rod is attached in an upright position, showing the parallelism of both the rod and piston. Additional arbors of sizes



Whitney Aligner for Detecting Bends

ranging from 1¼ in. to 2½ in. may be had. A 2-in. arbor, however, accompanies each Aligner unless otherwise specified.

A reversible "V" Block, turning on a vertical sliding spindle, is readily adjustable to the wrist pin elevation, retaining this location and showing all twists of the pin and exposing defective pin bushings.

Height, 17 in.; base dimensions, 6 in. x 7 in.; travel of block, 6½ in. List prices: Aligner complete with 2-in. arbor, $28, $30, $31.50, $33. Additional arbors up to 2½ in., $2.50; east of the Rockies, $2.75; west of the Rockies, $3.25; Canada, $2.75 foreign. Weight (not crated), 27 lb.

Rubber Highway Undergoing Test

The rubber highway had another tryout recently when an experimental pavement was laid by the Chicago, Milwaukee & St. Paul Railroad at the Main Street Grade crossing at Racine, Wis. The paving material is a "brick" made from scrap tires by a new process recently developed by the Wright Rubber Products Co., Racine.

Wear and Tear—

on a truck chassis is due less to the actual work the truck does than to the continuous destructive jolting due to careless driving, rough roads, car tracks and cobblestones.

Resilient Wheels—

by partially absorbing that jolting, reduce the wear and tear on the chassis, and especially on the vital unsprung parts, such as the axles, drive shaft and differential.

BECAUSE it combines tremendous strength with the ability to "give" under stress, rolled steel is the ideal truck wheel material. The Bethlehem Wheel is the one truck wheel that is made of rolled steel. It is the one wheel that has great strength and durability plus enough resiliency to measurably soften road shocks and lessen wear and tear. Trucks equipped with Bethlehem Wheels last longer and need fewer repairs.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

Sales Offices in New York, Boston, Philadelphia, Washington, Pittsburgh, Detroit, St. Louis, Baltimore, Atlanta, Cincinnati, Cleveland, Buffalo, Chicago and San Francisco.

BETHLEHEM
ROLLED STEEL TRUCK WHEELS

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

Bull-Dog Nut Lock

The Bull-Dog Nut Lock offered by the Waynesboro Nut Lock Co., Waynesboro, Pa., operates on the principle of the alligator wrench. It can be tightened up but cannot be backed off. Upon tightening the nut the tooth engages the thread thereby preventing the nut from moving backward even with a wrench, and on account of the tooth having a rake or being located angularly to the center, the greater tendency to back off, the tighter the lock becomes.

This Nut Lock Can be Tightened But Not Backed Off

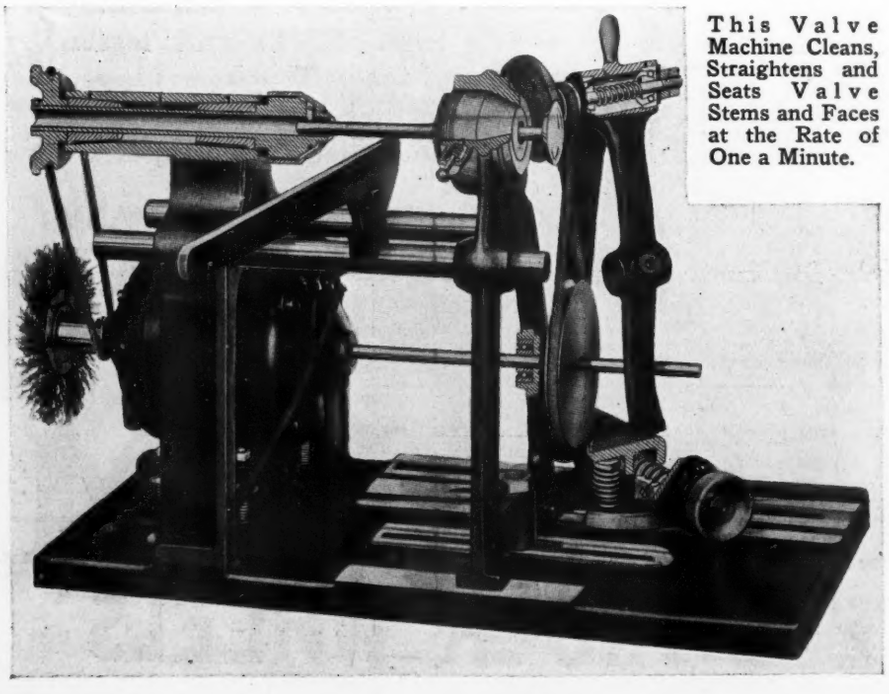
Evans Valve Machine

The Automotive Engineering & Manufacturing Co., 542 W. Jackson Blvd., Chicago, Ill., recently placed on the market a specially designed valve machine, known as the Evans. This machine shop unit is claimed to remove carbon, straighten valve stems and reface valves at the rate of one pair per minute. It will true up the emery wheel when it becomes rough and will sharpen any set of valve reamers.

Norma ball bearings are used in the grinding head. They are automatically adjusted, and operate in oil. In the chuck spindle are taper bronze bushings that can be taken up for wear. The feed screw and all bearings in the grinding head are adjustable for the taking up of wear. The chuck is specially constructed and will withstand the strain of straightening valve stems without getting out of true.

The machine is adjustable to any length valve, permitting employment of the straightening device, which is a part of the machine over the entire length of the valve stem.

It is equipped with a guaranteed ⅛-hp. Westinghouse motor with a dust-proof housing. Equipment also includes holder for diamond for truing emery wheel and an attachment for grinding valve reamers and two extra emery wheels.

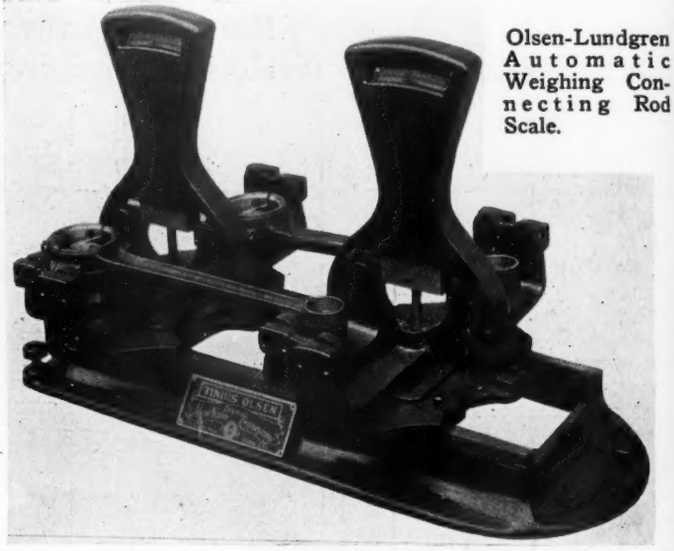


This Valve Machine Cleans, Straightens and Seats Valve Stems and Faces at the Rate of One a Minute.

Olsen Weighing Scale

A new form of scale has been developed by the Tinius Olsen Testing Machine Co., 500 N. 12th St., Philadelphia, Pa., known as the Olsen-Lundgren Automatic Weighing Connecting Rod Scale. With it all connecting rods may be weighed with great accuracy in a single operation. Two dials, as shown in the accompanying illustration will indicate automatically the differences in weight of the two ends of the connecting rod to be weighed placed on one side of the scale, as compared with the two ends of a master or standard connecting rod, placed on opposite side of scales.

One of the primary features of this method of weighing is the adoption of a master or standard for comparison, as it is then readily seen that every connecting rod weighs identically the same and the weight of such parts is thus standarized.



Olsen-Lundgren Automatic Weighing Connecting Rod Scale.

New Single Speed Bench Lathe

A new single speed, portable 6-in. bench lathe has been placed on the market by J. D. Wallace & Co., 1401 W. Jackson Blvd., Chicago, Ill., manufacturers of portable bench machines. It is intended for work up to 6 in. in diameter. It clears 5 in. over the tool rest and 7 in. on the face plate, with a full 24 in. between the centers. The r.p.m. of 3400 at which this lathe is set is stated to be particularly practical for this machine and its work up to 6 in. in diameter.

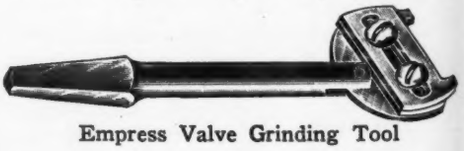
The machine weighs 203 lb. which weight permits it readily to be moved without effecting its rigidity. Height overall is 46 in.; length, 40 in. The open subbase serves as a holder for tools.

The 1/3-hp. G. E. motor is built into the head stock and is entirely inclosed against dust. It is direct connected to the lathe spindle. It is controlled by a conveniently located switch.

Standard equipment includes motor, two tool rests, spur center, hand wheel, face plate, 10 ft. of lamp cord and plug.

Empress "Perfect" Valve Tool

The Empress valve grinding tool, also known by its trade name Perfect, is designed for use in a conventional bit brace. A swivel head permits grinding the valves from an angle. The jaws may be adjusted to fit any valve with holes drilled in the top, or may be removed entirely for a valve that has a slotted head.



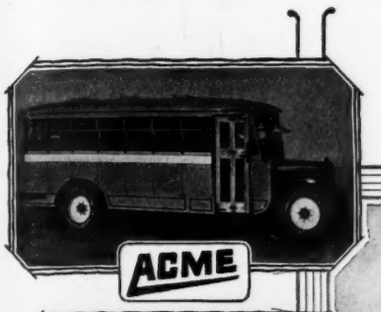
Empress Valve Grinding Tool

This tool is ruggedly constructed. The head is stamped sheet steel and the handle steel rod. Finished in black enamel. Price, 50 cents each. It is offered by the Bowen Products Corp., Auburn, N. Y.

OVERWHELMING PREDOMINANCE

at ATLANTIC CITY

Electric Railway Convention!



86% Equipped with Ross Steering Gears—

The predominance of Ross Steering Gears was again strikingly demonstrated at Atlantic City, October 8-12. Of all the motor buses shown at the American Electric Railway Association Convention, 86% of those whose builders buy this important unit, were equipped with Ross Steering Gears. The manufacturers realize that the transportation of human passengers is

A Service where Safety is Paramount

and that safety has its very foundation in steering control. The new Ross Cam and Lever Steering Gear embodies all the durability and service of the screw and nut type upon which Ross reputation was built, but it adds a greater element of safety—a greater efficiency for the driver—in easy steering and quicker and surer control.

In buying or building a motor bus, specify Safety and Easy Steering with a Ross Steering Gear.

ROSS GEAR & TOOL COMPANY
760 Heath St. Lafayette, Indiana, U.S.A.

ROSS STEERING GEARS

ENORMOUS POWER ~ NO ROAD SHOCKS ~ EASY STEERING

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Activities of the Motor Truck Association of Philadelphia

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W. ROSS WALTON, Treasurer

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THE COMMERCIAL CAR JOURNAL OFFICIAL ORGAN

THE intricacies of the new automobile Title Law, and also the Williams Motor Bill, were explained in detail by Benjamin B. Eynon, Pennsylvania State Registrar of Motor Vehicles at the first monthly meeting of the Philadelphia Motor Truck Association on Wednesday evening, Oct. 24th at the Hotel Adelphia.

Mr. Eynon warned the 150 members and guests present of the importance of making application for the securing of title certificates for their cars by November 25th, when the law goes into effect. He stated that the law as passed had been declared by the authorities in other states to be the most satisfactory law so far enacted in any state for the protection of motor cars from theft. The law, he said, had been endorsed by the National Automobile Chamber of Commerce.

On and after November 25th, every motor vehicle, passenger car or truck in this state, Mr. Eynon said, must have a certificate of title or it cannot be operated. He said that the new law gives the owner of the car legal protection of ownership, the same as a title deed does to property, and that no transfer of ownership can be made without securing new certificate of ownership. This applies to both new and used cars.

Continuing, Mr. Eynon said, "After November 25th, it will be unlawful to sell a car unless you have the certificate of title, and the penalty for violation will be $1000 fine, or imprisonment, while the penalty for operating a car without a license will be from $50 to $100. The Department of Highways will now have a record for the title of all cars in the state. The dealers should make application now in order to carry on their business. The new law provides that the owner must show the source of his ownership, how it was acquired, whether by cash or trade, and what encumbrances there are against the car. Also there is a legal provision now requiring the operators after March 1st, 1924 to take an operator's examination, and secure a license for the same at a cost of $1.

"It is estimated that next year there will be at least 2,000,000 operators in this state. The examination for new operators will be $2.50. The new law also has drastic regulations regarding headlights, to eliminate glaring and make the highways safe for night driving. In the very near future we hope to have 100 trained motor patrolmen on motor cycles who are now being trained at Mt. Gretna in order to control the roads of the state and control motor traffic.

"Dealers' license plates will be allowed as heretofore, and of course licenses will be required for all cars either owner or dealer driven under the new Title Certificate Act."

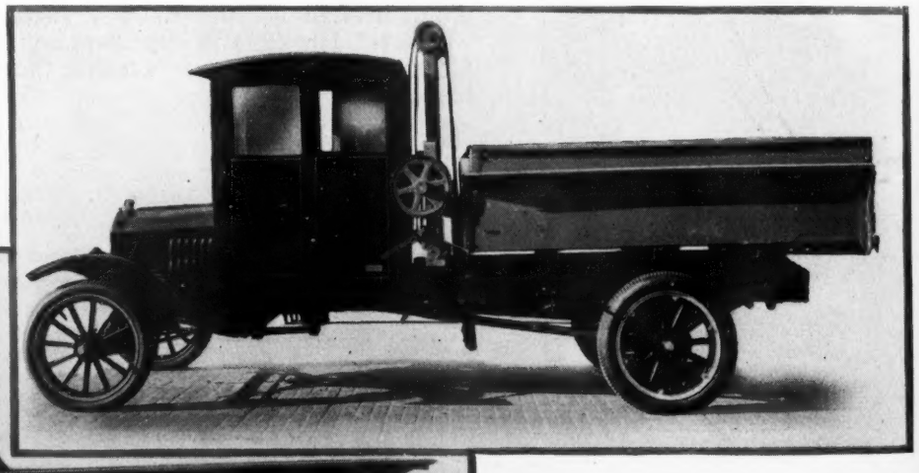
Mr. Eynon then gave some data as to the vast amount of work the department is handling. He said that up to October 1st, there was a total of 1,150,000 cars in this state, an increase of 250,000 over the same period last year. The Department had taken in receipts of $15,300,000 an increase of over $3,000,000 over the same period last year. The licenses issued, he said, consumed 854 tons of steel. They would, if laid down end to end, extend 420 miles, and if piled on top of each other, would extend upwards 2 miles. In Pennsylvania, there is a motor car to every 9 persons.

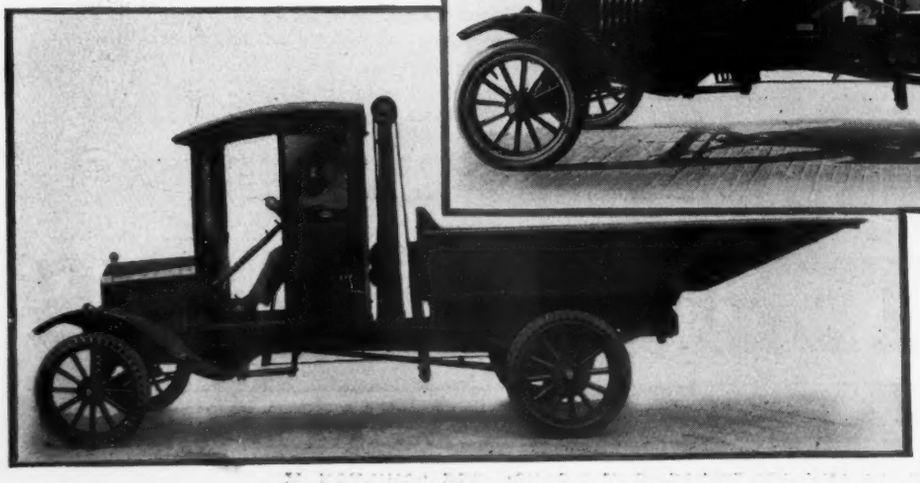
There are 6 times as many passengers carried by automobiles as carried by railroads of the state, and 87 per cent of the merchandise is hauled by motor trucks as carried by the railroads. He made a special plea for the purpose of the Association to urge passage of the $50,000,000 Good Roads Bond issue to come up at the next election, and stated that if it had been passed this year, the state could not vote on such a bond issue for five years. The receipts from license fees, he explained, were required to be used for maintenance of roads, and could not be used for new roads, and therefore the $50,000,000 bond issue was solely for the construction of new roads.

W. W. Mathews, chief inspector of the Highway Department, gave some interesting data on headlights. The new law, he stated, would cut down the number of approved headlight devices from 125 to about 30, which would thus simplify that problem.

Auglaize Dump Job

The job to the right consists of an 80 ft. dump body, an Olsen No. 9 Extension and a Warford transmission. The body made of No. 10 gage steel is provided with a double acting tail-gate. The body is substantially built and is formed in two pieces in a 10-ft. flanging press. The corners are heavily reinforced and joined together by steel castings hot riveted in place.





Auglaize Dump Job

The illustration at the left is that of a 2-yd. garbage dump also mounted on a Ford one-ton job equipped with a No. 9 Olsen Extension. The body is hot-riveted and welded water-tight. Both jobs are made by the Auglaize Hoist and Body Co., New Bremen, Ohio.

On the radiator of every Acme is this Seal of Dependable Performance.

Trade-Mark registered U.S. and other countries.

"ACME FRANCHISE NETTED ME FINE PROFITS"

—Walter D. Helm, Ithaca, N. Y.

Mr. Helm also writes: "The prospects are for an increase next year. In my opinion Acme is as fine a motor truck as is possible to manufacture. During the three years I have had this territory I have learned of the great benefits derived from your wonderful factory co-operation."

Hundreds of other Acme dealers have built up permanent, profitable businesses through association with Acme trucks—the liberal co-operation of the Acme organization—and the dependable service of the Acme truck.

We are now ready to disclose new and interesting information regarding the money-making and business-building opportunities found in the new Acme Franchise.

Our program is being enlarged. New territories are being developed. New and greater opportunities are being offered live dealers.

The Acme is easy and profitable to sell. It is—The Truck of Proved Units—Proved Performance—Proved Profits.

There are 10 models—speed truck to a powerful giant truck of 12,500 lbs. capacity. Each one a master of load and road.

If the Acme Franchise is open in your territory—write us at once for full particulars of Acme superiority and exclusive selling rights.

Do it NOW. Your territory will not be open long.

ACME MOTOR TRUCK COMPANY

537 Mitchell St., Cadillac, Mich.

ACME

THE TRUCK THAT MOVED A TOWN

When Acme trucks moved the entire town of Jennings, Mich., to Cadillac, Mich., this church, 70 feet high, was one of the hundred buildings moved. The work was done by an Acme Truck and an Acme-designed trailer.

THIS SYMBOL IN ANY ADVERTISEMENT MEANS: SEE "CHILTON AUTOMOBILE DIRECTORY" FOR COMPLETE BUYING INFORMATION

How a Real Motor Truck Distributor Functions

(*Continued from page 10*)

"We keep our stock room open Sunday mornings, as we find that many trucks are repaired at that time and there is always a brisk demand for parts from our service station.

Monthly Inspection System

"A feature of our service to Garford owners that has been of immense value to us is the monthly inspection we insist upon. Every Garford truck in Pittsburgh is supposed to be sent in once a month for inspection, and if it doesn't come in within a 60 day period, we send a man out after it. The inspector has the regular Garford inspection sheet, and he checks the truck over very carefully for every detail of its operation.

"Minor adjustments are taken care of by the inspector, but if more serious trouble is uncovered, the owner is notified at once so that repairs may be made in time to save him both money and loss of time on the truck. We have found that truck owners appreciate this service.

"Three copies of each inspection report are made, one going to the owner, one to the factory and the third we keep."

The Mueller Brothers' establishment at Pittsburgh is one of the most complete in the industry. The building is of brick, three stories in height with a basement, and is attractive in appearance.

Every convenience is furnished the employes, including a lunch room where coffee and other things are served to those who wish something other than the lunch they bring from their homes.

The service shop, parts department and storage floors are all roomy and complete in every detail.

And the entire structure is KEPT CLEAN AT ALL TIMES, which is, unfortunately, something that cannot be said about many motor truck sales and service establishments.

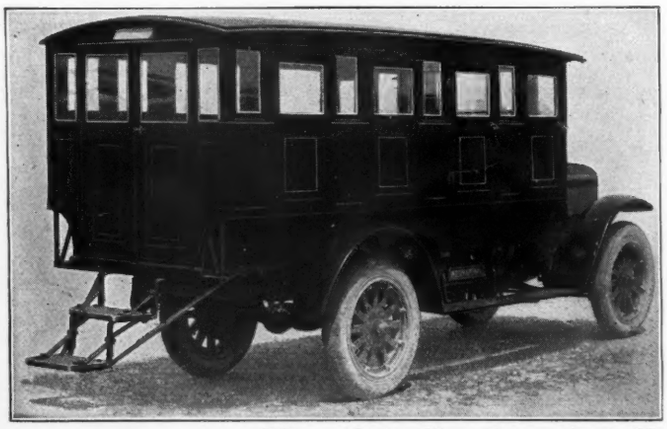
International Combination Motor Stage

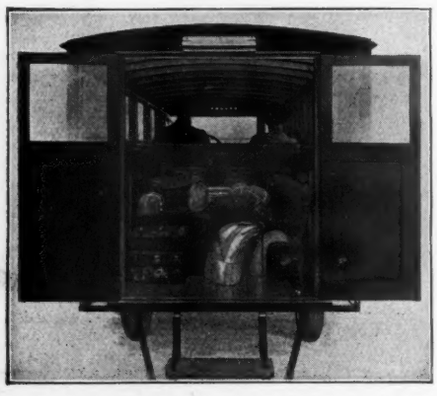
The new International Motor Stage recently announced by the International Harvester Co. of America, Chicago, Ill., is a speedy combination passenger and express vehicle. It is described as been an ideal unit for maintaining scheduled passenger, parcel and mail service between towns up to 150 miles apart where no other transportation is available.

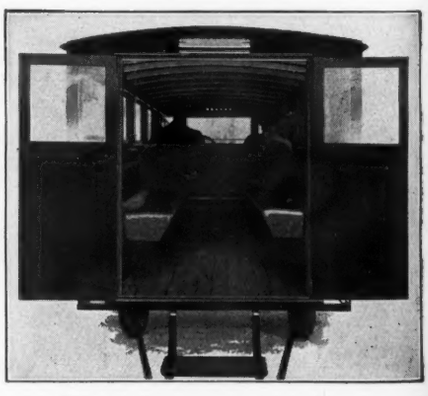
Besides two roomy cross seats facing forward in front of the stage for driver and five or six passengers, there are two folding side seats in the rear which can accommodate from six to eight additional passengers. These last-named seats folded back, however, provides a large compartment for baggage, or mail.

This stage may work as a feeder to railroads or connect inland towns with seaports. It may, also, serve as a summer resort bus or as a hotel-and-station wagon. For summer resorts and hotels, particularly, it does the work of transfer truck as well as bus, thus eliminating delays in delivery of guests' baggage.

The inside width of the stage is 60 in. The baggage or parcel compartment with seats folded is 62 in. long by 36 in. between protecting strips on bottom of folded seats. There are four drop windows in each side which allow ample air circulation in warm weather. Driver's door is located at the left of steering wheel. Front and second seats have individual doors at the right side, while double doors at the back access to rear compartment for passengers or freight loading as the case may be. The stage is mounted on a Model S International and operates at 25 to 30 m. p. h.







Views of the New International Motor Stage. It is a Combination Passenger and Express Vehicle

Bethlehem to Adopt Four Wheel Brakes

Four wheel brakes will be adopted by the new Bethlehem Motors Corp. of New York, Allentown, Pa., on all its models according to a report recently received from this company. It is the belief of the Bethlehem Corporation that the increased braking efficiency provided by front wheel brakes is of even more importance in truck than in passenger car construction.

Report on Bus Operation

(*Continued from page 15*)

life of bus equipment. All of the depreciation is set up on a tentative basis with the idea of revising it, after experience to the basis of actual conditions as nearly as possible. So long as depreciation is recognized as a part of the cost of operation, it will make small difference under present circumstances whether it is figured on a straight line or mileage basis."

NOT IN ACCORD ON TAXATION

IN view of the fact that more and more electric railways are operating motor buses, the question of taxing motor buses is one which must be considered carefully. The same traction officials who advocated heavy taxation of motor vehicles in the past, will find this policy a detriment perhaps at some future time. Although the Trackless Transportation Committee urged that "Co-operative action with the automotive vehicle association is desirable," in respect to taxation, the Committee on Uniform Motor Vehicle Regulatory Laws, suggests that "there should be urged upon the public the necessity of taxing motor vehicle common carriers on the basis of the amount of use of the highways. In other words, there should be some relation between the damage done to highways by motor vehicle common carriers and the amount of tax paid by such carriers for the use of the roads. To secure complete compensation for the use of the highways by motor vehicle common carriers, every state should be urged to study this question on the basis of reducing their information to the point of how much damage a ton mile of travel does in cents and fractions thereof to each type of highway commonly in use. When that has been determined by investigation, the rate of taxation per ton mile of travel can be accurately fixed. Until it has been determined the principle involved in the application of the ton mile tax should be urged and the rate set at a tentative figure that will be certain to be sufficient.

"In general, however, the plans of taxation remain chaotic, unscientific and unremunerative. As a rule the taxes in all states are much lower probably than the cost of maintaining highways damaged by motor vehicle common carriers. Until this situation has been corrected the public will be subsidizing the operation of these new transportation units."

Reasons for Simplification Summarized by Automotive Industry

Basic reasons for standardizing and simplifying parts and accessories have been formulated by the Automotive Simplified Practice Committee and are made public now for the first time by M. L. Heminway, chairman.

This committee embraces all the principal organizations of the automotive industry and represents the manufacturers, dealers, engineers, in every branch of the trade.

Constituent members of the Automotive Simplified Practice Committe are:

Aeronautical Chamber of Commerce, American Automobile Association, Automotive Equipment Association, Automotive Electric Association, Motor and Accessory Mfrs. Assn., Motorcycle and Allied Trades Assn., Motor Truck Industries, Inc., Nat'l Automobile Chamber of Commerce, Nat'l Automobile Dealers Assn., Nat'l Hardware Association, Rubber Association of America, Society of Automotive Engineers, Inc.

The principles of simplification, as proclaimed by this committee are of direct interest, not only to companies and individuals in the trade or the industry, but to all persons driving or owning motor vehicles, because the program of simplification is designed primarily to benefit the public by increased efficiency, comfort and economy in automobile operation.

The Seven Reasons for Simplification follow:

1. **Simplification** means standardization of those specifications and sizes in automotive construction where individuality is neither necessary nor desirable.
2. **Simplification,** through saving of cost and effort on many details, makes possible greater individuality with respect to those factors where distinctive style or size is an asset.
3. **Simplification** reduces cost to manufacturer by permitting greater mass production and reducing capital outlay.
4. **Simplification** reduces cost to jobber and dealer by calling for smaller inventory, and by quickening turnover.
5. **Simplification** reduces cost to automobile users through lower price and lower maintenance cost.
6. **Simplification** improves service to user by making it easier to repair and replace parts and units.
7. **Simplification** means the adoption of those standards established by investigation or authority to be a reasonably attainable maximum of desirability.

Urges Industrial Advisors for Ruhr Conference

"Industrial advisors will be needed to help untangle the European situation," said H. M. Robins of the Foreign Trade Committee of the National Automobile Chamber of Commerce, when interviewed at that office on return from a trip abroad.

"All countries of Europe may expect to be favorably affected by settlement of the Ruhr. A solution may be difficult to find for such a complicated problem with its divergent ramifications that affect all phases of Europe's economic life. Accordingly, in devising means for payment of reparations, it will be insufficient to consider only political and financial aspects and omit industrial phases.

"Motor transportation in Germany offers a typical illustration. If an erroneous policy of destructive taxation should be adopted in this field in attempts to secure large sums of money, immediately the productive use of motor transportation would be hampered, with resulting harm to the economic activity of the country. The hampering is a check on many other forms of wealth. For instance suburban realty values are dependent on transportation facilities, both motor and rail. Undoubtedly general high taxes will be needed, but economists and industrial advisors should be consulted in order that such taxes will not defeat their own purposes."

Bauer-Stuart to Make Harve Stabilizers

The Bauer-Stuart Co., Springfield, Ohio, has been organized for the purpose of manufacturing and selling the Harve Stabilizer. According to the officials, this device materially stabilizes the riding qualities of an automobile through the scientific application to the spring leaves of a force heretofore unrecognized.

Officers of the company have been elected as follows: Louis E. Bauer, president; Harve R. Stuart, vice-president and W. B. Kleeman, secretary and treasurer. M. W. Sunderland has been made sales manager. The extent of the production has yet been undecided.

1923 Adds Big Mileage to Federal-Aid Roadways

Federal-aid roads totalling 8,820 miles were completed during the fiscal year ending June 30, 1923, bringing the total of Federal-aid roads completed to 26,536 miles. The mileage completed during the year is classified as follows:

	Miles
Graded and drained	1860.1
Sand-clay	749.5
Gravel	3815.4
Waterbound macadam	335.6
Bituminous macadam	452.9
Bituminous concrete	76.8
Concrete	1440.3
Brick	78.8
Bridges	10.8
	8820.2

The projects under construction at the close of the year amounted to 14,772 miles and were estimated as 55 per cent complete. In addition to the 26,536 miles completed and the 14,772 miles under construction there were at the close of the year a number of projects approved but not yet placed under construction, the aggregate length of which was 6,917 miles.

Erickson Forms Knife and Tool Company

The Pioneer High Speed Machine Knife & Tool Co., has been formed at Cleveland, Ohio, by A. W. Erickson, whose experience in the manufacture of shear blades and knives covers a period of 31 years. Recently Mr. Erickson resigned as superintendent of the Wapakoneta Machine Co., Wapakoneta, Ohio, which position he has held for the past seven years. The new company now has a well equipped factory in production in Cleveland.

Sizer Steel to Continue Manufacture of Forgings

At a recent meeting of the creditors of Sizer Steel Corporation, Buffalo, additional funds were provided to permit the receivers to resume the manufacture of commercial forgings which branch had been temporarily discontinued.

The Sizer Plant at Buffalo will now turn out all kinds of open hearth and electric steel forgings, in both carbon and alloy grades, or of wrought iron, in addition to their regular lines of electric steel die blocks and oil-well billets. Manufacturing at this plant is under the direction of Geo. F. Scherer, who has been in charge of this work during the last fifteen years. V. B. Schupp, will continue in charge of forging sales, assisted by E. A. Mansfield.

The sales of oil well bit and jar steels and spiral drilling stems will still be under H. W. Hunsiker, assisted by L. E. Nebergall, of Denver, Colo., who is the inventor of this latter product, and L. S. Allen, of Tulsa, Okla.

The Hammond Plant at Syracuse will continue to manufacture carbon, alloy and tool steel rolled bars and forgings made from electric furnace steel, trimmer steels and the spiral stems. The plant is managed by L. G. Pritz, who has been with the company for the past 15 months and who formerly was with Timken Roller Bearing Co. and the Illinois Steel Co. The sales of this plant will continue in the hands of Rowland S. LeBarre, in Cleveland and the west, C. R. Poole in the Buffalo territory, and C. A. Swan in the east.

The three receivers of the Company are C. B. Porter, of Buffalo, formerly president of Sizer Forge Co., John T. Dillon, of Buffalo, president of the Titusville Iron Co., and Stewart F. Hancock, an attorney of Syracuse.

Cox Bumpers Changed to Eaton Bumpers

Cox Bumpers, manufactured by the Cox Brass Manufacturing Co. since 1909, will hereafter be known as "Eaton Bumpers." This change, it is announced by the Eaton Axle and Spring Co., (which recently took over the Cox Bros. Manufacturing Co.), is for the purpose of simplicity and to avoid a confusion of many different names and trade marks. Therefore, the Bumpers heretofore known as "Cox Bumpers," "Hylo Bumpers," "Endurance Bumpers," "Gard-All Bumpers," etc., will be known as Eaton Bumpers.

Moto-Meter Backing an Automotive Christmas

An artistic lithographic window display emphasizing the Christmas spirit in connection with automotive accessories as gifts is being mailed to the trade by the Moto-Meter Company, Inc., Long Island City, N. Y. The display breaks away from the conventional by calling attention to the products of the other reliable manufacturers as well as Moto-Meter products.

Edward F. Loomis N. A. C. C. Truck Secretary

Edward F. Loomis of Springfield, Mass., has been appointed secretary of the Motor Truck Committee of the National Automobile Chamber of Commerce to succeed F. W. Fenn, who has entered the truck business. Mr. Loomis was graduated from Amherst in 1917 and after service on the Springfield Republican became managing editor of the New London Day. The committee which guides the motor truck activities of the Chamber consists of Windsor T. White (White), chairman; C. H. Browning (International Harvester); D. C. Fenner (Mack); David S. Ludlum (Autocar); Robert O. Patten (Pierce-Arrow); M. L. Pulcher (Federal); E. H. Williams, Jr., (Garford).

Third Truck Order for Japan Placed by Pierce-Arrow

Colonel Fred Cardway, international distributor of Pierce-Arrow cars and trucks, has just secured the third order for Pierce-Arrow trucks which has followed the Japanese earthquake. The first and second orders already have been filled and shipped and the third order will be executed immediately.

The third order for the 50-ton models placed by the Imperial Japanese National Railroads. The trucks will be employed largely for terminal work at Tokio and Yokohoma and they have been purchased not only for use during the immediate crisis but as permanent handlers of short haul freight at the chief railroad centers of Japan.

Appraisers Appointed for Vim Motor Truck Company

William P. Rowland, M. J. MacNamara and John P. Hill will act as appraisers for the Vim Motor Truck Co., of Philadelphia. They will report their findings to the United States Court for the Eastern District. It will be remembered that in September Kern Dodge was made temporary receiver with instructions to conduct the business in the interest of creditors and stockholders.

The Vim Company is said to be solvent, its liabilities on August 31 being $1,301,277.50 exclusive of capital stock liability and its assets were $2,468,081.69, but there is a lack of working capital.

Battery Men Organize in St. Louis

A battery trade association has been organized at Kansas City, a meeting for the pupose of taking the first steps toward this organization having been held in St. Louis. The movement has been started by W. P. Ryan, president and B. E. Bauer, manager, of the Midland Battery and Equipment Co., who have personally enlisted the support of a large number of battery retail men. The association will employ a secretary outside of the battery business.

Bessemer in Production With a New Model

According to an announcement just received the Bessemer Motor Truck Co., Plainfield, N. J. is in production on a new model 2½-ton truck. This new addition to the Bessemer line of trucks, is known as the Model L and was designed especially for heavy duty service. It is replete with constructional features and embodies all the modern principles employed in truck designing and engineering.

Particular care has been exercised in the selection of units. Only those which the engineers believed would meet the exacting requirements of the service for which the job was designed and which have proved their durability were selected.

Considerable attention was also given to the angle of accessibility. Before the location of a certain unit and its components was definitely established, the engineers first determined whether such and such a location would hamper ready adjustments and repairs. The net result of this study, it is explained, is a perfect disposition of units, which makes for ease of adjustment and a considerable reduction in the time element of repairs. Full specification details will be given in the December issue of the COMMERCIAL CAR JOURNAL.

Profits in Hauling Potatoes by Truck

Lower transportation costs may be obtained by hauling potatoes by motor truck according to the following item in the Dairymen's League:

"F. O. Simeson of the famous Aroostook potato-growing section of Maine, has 160 acres devoted to potatoes, 7½ miles from market, producing 24,000 bbls. of potatoes a year and found it impossible to deliver the potatoes in season.

"On account of the road grade between farm and railroad, one team of horses could only haul 20 bbls. of potatoes at a trip. It would have taken 1,200 working days with one team—just a little more than 3 years—to haul the potato crop to market. It would take 20 teams and 20 drivers to do the work in season which would cost more than $6000.

"A motor truck was put to work, and based on the old price of 25 cents a bbl. for hauling the potatoes by horses, this truck paid for itself the first season, hauling 24,000 bbls."

Disastrous Fire in Kelly-Springfield Branch

Fire damaged the building of the Chicago branch of the Kelly-Springfield Motor Truck Co., 2630 S. Wabash Ave., on October 15, to the extent of $100,000. The fire, starting when grease on the second floor of the building was ignited by a short circuit in a repair light cord, burned 15 trucks and damaged a number of others.

General Motors Making New High-Powered Truck

Production has been started at the General Motors Truck Co., Pontiac, Mich., of a new truck with a high-powered motor to meet the demands of contractors, bus operators and truck owners in mountainous territories.

The chassis of this truck is of the standard two ton type, but the motor is that usually found in the three and half ton G M C truck.

In appearance, the truck is the same as the standard GMC model; it carries a special hood, a higher radiator, and can be furnished in any one of four different chassis lengths at $625 additional list price.

Statement of Ownership, Management, Circulation, Etc.

Required by Act of Congress of August 24, 1912

Of COMMERCIAL CAR JOURNAL, published monthly at Philadelphia, Pa., for October 1st, 1923

State of Pennsylvania,
County of Philadelphia, ss.:

Before me, a Notary Public in and for the state and county aforesaid, personally appeared C. A. Musselman, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the COMMERCIAL CAR JOURNAL, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication, for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form to wit:

1. That the names and addresses of the publisher, editor, managing editor and business manager are:
   Publisher, CHILTON COMPANY, Chestnut and 56th Streets, Philadelphia, Pa.
   Editor, James Artman, 4538 Chestnut St., Philadelphia, Pa.
   Managing Editor, Albert G. Metz, So. Ardmore, Pa.
   Business Manager, C. A. Musselman, Merion, Pa.
2. That the owners are:
   James Artman, 4538 Chestnut St., Philadelphia, Pa.
   George H. Buzby, Wellington Apartments, 19th and Walnut Sts., Philadelphia, Pa.
   C. A. Musselman, Merion, Pa.
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3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.
4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders, who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and that this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

C. A. MUSSELMAN,
Business Manager.

Sworn and subscribed before me this 20th day of September, 1923.

(Seal) HARRY SMITH.
(My commission expires March 7, 1925.)

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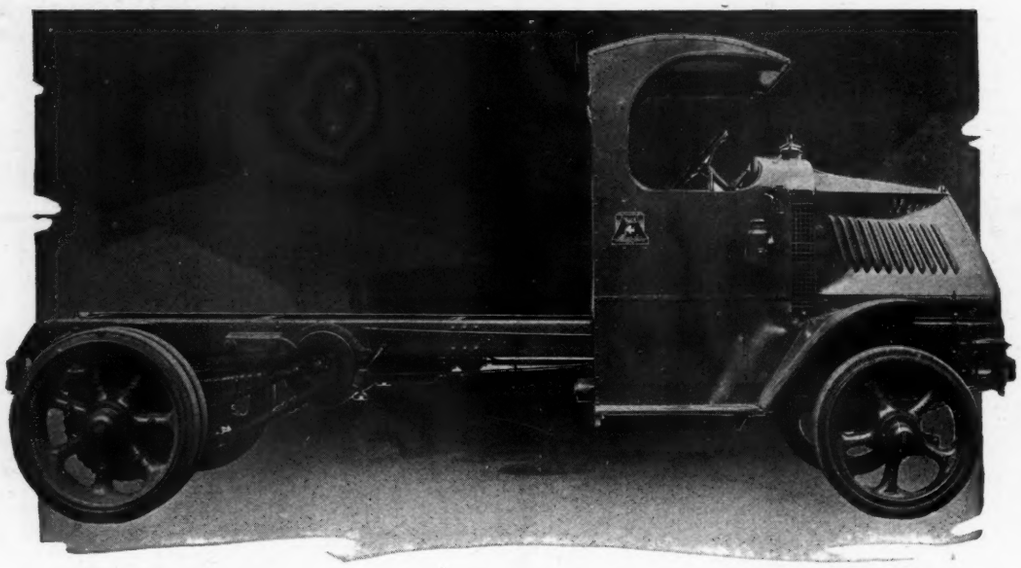

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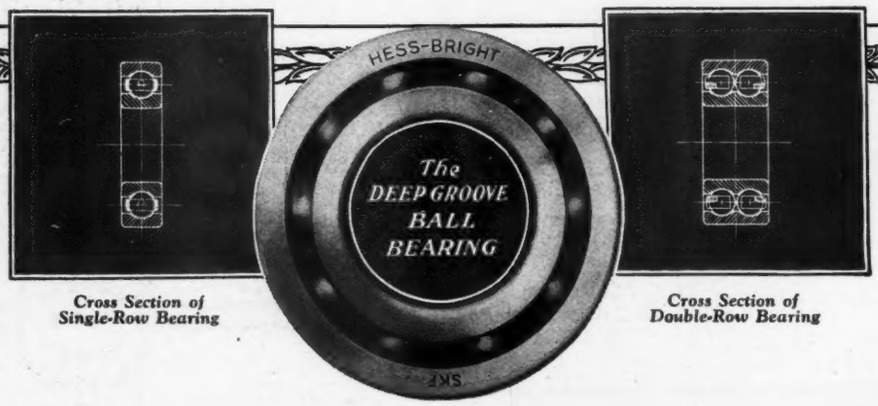

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